DRAWINGS FOR CONSTRUCTION OF

SOUTHWEST AQUEDUCT REACH 2 PROJECT

Jordan Valley Water Conservancy District

N

500 0 1000 2000

SCALE IN FT

LEGEND

- SWA
- JA-2
- Water Way
- Major Roads
- City Boundaries

Herriman

Welby Jacob Canal

BEGIN PROJECT STA 200+00

CONTRACTOR STAGING AREA

PIG LAUNCH STRUCTURES

3200 W METER VAULT

INTERCONNECTION VAULT

Jordan Valley Water Treatment Plant

AIR VALVE/ MANWAY ACCESS VAULT

48" DIA 15000 SOUTH INTERCONNECTION

66"Dia Southwest Aqueduct Reach 2

Jordan Aqueduct Reach 2

AIR VALVE/ MANWAY ACCESS VAULT

24" 14400 SOUTH INTERCONNECTION

14400 S

3200 W

EXISTING 14400 SOUTH INTERCONNECTION AND MANWAY ACCESS VAULT

EXISTING SWA (VISTA-MEADOWS)

Utah Lake Distributing Canal

AIR VALVE/ MANWAY ACCESS VAULT

EXISTING SWA (BANGERTER HWY CROSSING)

13800 S

Bangerter Highway

13400 S

13400 SOUTH PUMP STATION

END PROJECT STA 319+36

13770 SOUTH RIVERTON PUMP STATION INTERCONNECTION AND AIR VALVE/ MANWAY ACCESS VAULT

13400 SOUTH MAINLINE VALVE AND INTERCONNECTION VAULT

SOUTHWEST AQUEDUCT REACH 2 SCHEDULE B

SOUTHWEST AQUEDUCT REACH 2 SCHEDULE C

3200 W ROADWAY IMPROVEMENTS SCHEDULE D

JVWTP SITE IMPROVEMENTS SCHEDULE A

15000 S

2700 W

Bluffdale

Riverton

Rose Creek

Utah Salt Lake Canal

2200 W

DATE OF PHOTO: SEPEMBER 2009

IDAHO

WYOMING

NEVADA

COLORADO

ARIZONA

PROJECT LOCATION

PROJECT LOCATION MAP

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW

CHECKED M. COLLINS

APPROVED J. LUETTINGER

DESIGN T. OLSEN

DRAWN R. GARCIA

GENERAL

PROJECT LOCATION MAP, AND VICINITY MAP

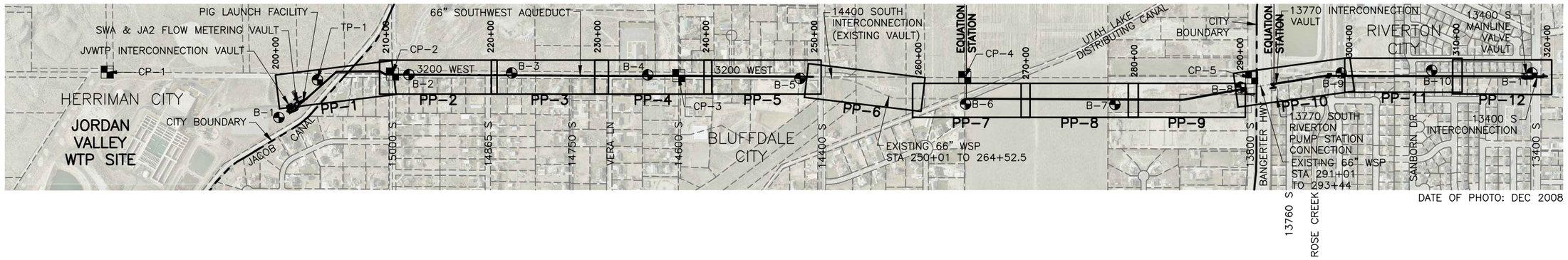
DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

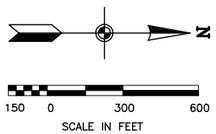
DRAWING NO. G-1

SHEET 1 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_G01.dwg Nov09,2011 – 3:36pm



DATE OF PHOTO: DEC 2008



SWA HORIZONTAL ALIGNMENT										
NUMBER	DESCRIPTION	STATION	NORTHING	EASTING	PI NORTHING	PI EASTING	DELTA	RADIUS	TANGENT	CURVE LENGTH
L1	POB	200+00.00	29115.48	59386.26						
L2	PI	200+09.98	29125.44	59386.32						
C1	PC	201+77.96	29278.70	59317.55	29292.84	59311.20	17°37'20"	100.00	N32° 58' 47"W	30.76
L3	PT	202+08.72	29304.40	59300.87						
L4	PI	205+72.97	29575.98	59058.13						
L5	PI	209+74.02	29977.01	59053.85						
L6	PI	210+33.70	30029.90	59081.48						
L7	PI	211+75.71	30171.85	59085.89						
L8	PI	250+01.21	33997.31	59103.84	CONNECT TO EXISTING PIPELINE, SEE PLAN					
L9	PI	251+23.72	34119.81	59104.88						
L10	PI	251+58.06	34151.46	59118.22						
C2	PC	251+94.74	34188.14	59118.43	34307.27	59119.14	23°04'47"	583.56	N11° 52' 51"E	235.07
L11	PT	254+29.81	34416.62	59166.50						
C3	PC	257+20.02	34682.92	59281.84			27°09'56"	281.09	N9° 50' 05"E	133.28
L12	PT	258+53.30	34813.01	59304.39						
	EQN BK	264+52.50	35410.04	59307.28						
	EQN AH	265+00.00	35410.04	59307.28	CONNECT TO EXISTING PIPELINE, SEE PLAN					
C4	PC	284+86.72	37396.72	59317.37	37415.23	59317.46	10°26'28"	202.75	N4°56'21"W	36.95
L13	PT	285+23.66	37433.48	59314.19						
L14	PI	291+01.13	38001.89	59212.33	CONNECT TO EXISTING PIPELINE, SEE PLAN					
	EQN BK	293+44.25	38241.41	59172.65						
	EQN AH	293+84.25	38241.41	59172.65	CONNECT TO EXISTING PIPELINE, SEE PLAN					
C5	PC	298+39.31	38690.94	59101.94	38733.08	59095.32	09°06'29"	534.50	N4°23'08"W	84.97
L15	PT	299+24.28	38775.57	59095.45						
L16	POE	319+36.38	40787.67	59100.90						

EXISTING SWA VISTA MEADOWS REACH (NIC)

EXISTING SWA BANGERTER HIGHWAY REACH (NIC)

PROJECT SURVEY CONTROL

HORIZONTAL CONTROL: LOCAL
VERTICAL CONTROL: NAVD 88
SURVEY CONTROL AND TOPOGRAPHIC MAP ARE BASED ON INFORMATION PROVIDED BY: ROBINSON, BIEHN, AND BIEHN, INC. PROFESSIONAL LAND SURVEYORS. SALT LAKE CITY, UTAH 84117. (801) 266-1118
CONTACT: TED BIEHN, PLS

■ = SURVEY CONTROL MONUMENT

◕ = GEOTECHNICAL BORING LOCATION

SOUTHWEST AQUEDUCT SURVEY CONTROL TABLE				
NUMBER	NORTHING	EASTING	NAVD 88 ELEV	DESCRIPTION BC = BRASS CAP R&L = RING AND LID
CP1	N 27452.19	E 59061.70	4787.31	BC MONUMENT
CP2	N 30095.14	E 59078.20	4693.84	BC MONUMENT
CP3	N 32745.43	E 59094.46	4617.35	BC MONUMENT
CP4	N 35395.63	E 59111.13	4573.44	BC MONUMENT
CP5	N 38051.96	E 59114.27	4546.06	BC MONUMENT

GENERAL NOTES:

1. SEE PP SHEETS FOR UTILITY POTHOLE LOCATIONS.
2. GEOTECHNICAL INVESTIGATION REPORT PROVIDED BY:
   GEOSTRATA
   781 WEST 14600 SOUTH
   BLUFFDALE, UT 84065
   (801) 501-0583
   CONTACT: HIRAM ALBA, P.E., P.G.

PIPE PREPURCHASE NOTES:

1. OWNER HAS PREPURCHASE STEEL MATERIALS 6-INCH IN DIAMETER AND LARGER. CONTRACTOR WILL BE ASSIGNED THE OWNERS PURCHASE ORDER FOLLOWING NOTICE OF AWARD. CONTRACTOR SHALL REVIEW STEEL PIPE PREPURCHASE DOCUMENTS PRIOR TO BID. ADDITIONAL PIPE MATERIALS REQUIRED FOR CONTRACTORS INSTALLATION PLAN INCLUDING DISHED HEADS, WELD PASS HOLES, CUT TO FIT SECTIONS, BUTTSTRAPS, ETC. NOT INCLUDED IN THE PREPURCHASE DOCUMENTS SHALL BE PROVIDE BY THE CONTRACTOR.
2. CONTRACTOR SHALL COORDINATE DELIVERING AND SHALL BE RESPONSIBLE FOR OFF-LOADING AND STORAGE PRIOR TO INSTALLATION. REFER TO THE SPECIFICATIONS FOR DETAILS.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS
NO. | DATE | REV. BY | DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN R. DARGER
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

GENERAL
DRAWING INDEX MAP, HORIZONTAL ALIGNMENT CONTROL AND SURVEY CONTROL

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. G-2
SHEET 2 OF 110

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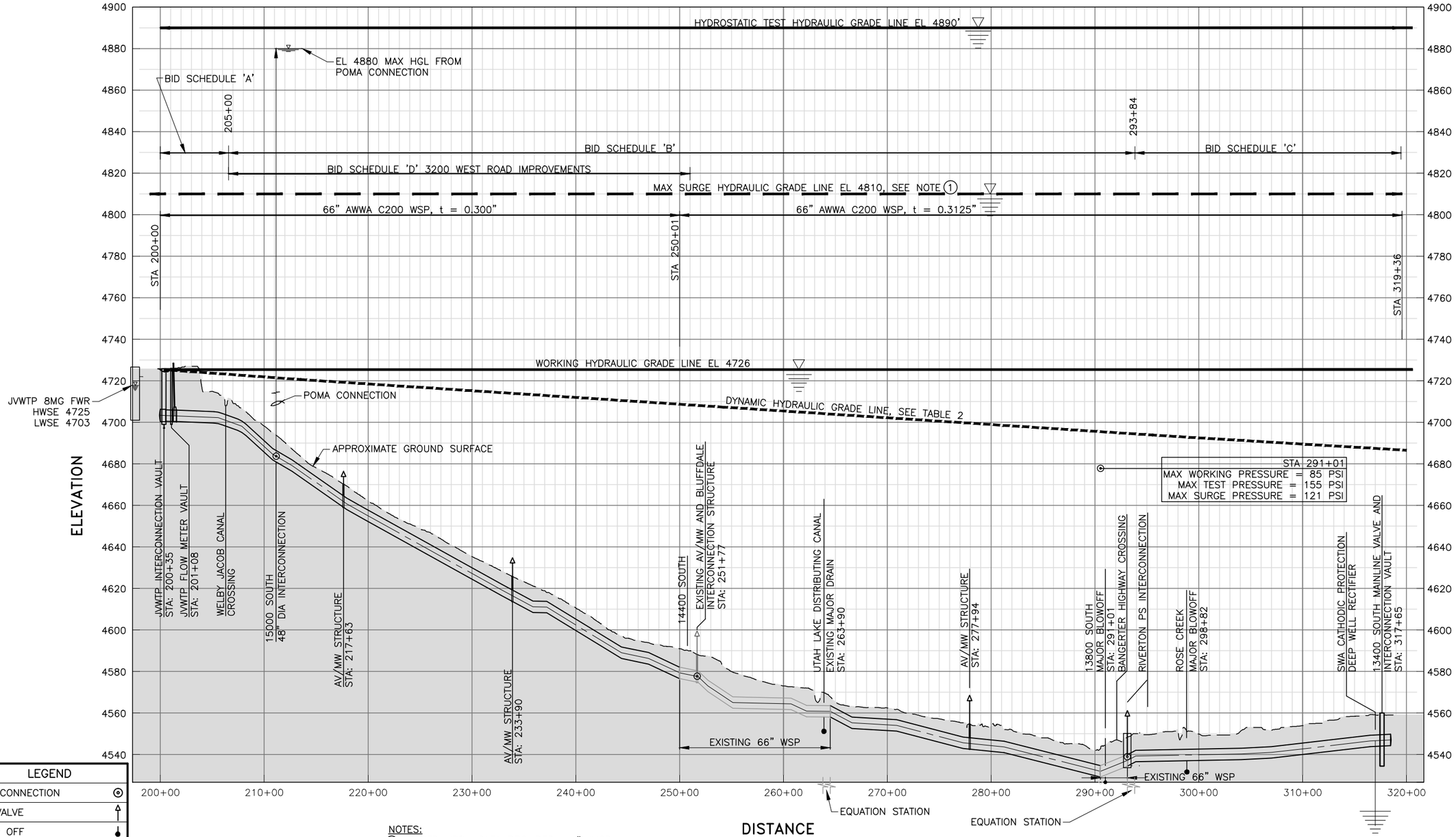
SOUTHWEST AQUEDUCT REACH 2 OVERALL PROFILE & HYDROSTATIC TEST DATA



LEGEND	
SWA CONNECTION	⊙
AIR VALVE	↑
BLOW OFF	↓

TABLE 1 HYDRAULIC CAPACITY	
EXISTING JVWTP CAPACITY	180 mgd (279 cfs)
FUTURE JVWTP CAPACITY	255 mgd (395 cfs)
JA-2 MAX CAPACITY (3)	158 mgd (245 cfs)
SWA MAX CAPACITY	120 mgd (185 cfs)
FUTURE CWP CAPACITY	22.6 mgd (35 cfs)
WATER SURFACE ELEVATION AT JVWTP	4725 feet
HAZEN WILLIAMS "C"	120

NOTES:

① BASED UPON DATA PROVIDED IN "JVWCD SURGE ANALYSIS – SOUTHWEST BOOSTER PUMP STATION" BY CH2M HILL DATED AUGUST 21, 2006.

② ELEVATIONS REFERENCE THE NAVD 88 VERTICAL DATUM

③ EXPECTED DEMANDS WERE OBTAINED FROM THE DEMAND, SUPPLY AND MAJOR CONVEYANCE STUDY COMPLETED BY BOWEN, COLLINS & ASSOCIATES, JANUARY 2005

TABLE 2 SWA CONNECTIONS HYDRAULIC INFORMATION					
SWA CONNECTION LOCATION	APPROX STATION	AGENCY RECIVING SWA WATER	EXPECTED DEMANDS AT CONNECTIONS (3)		SWA APPROX HGL
			(mgd)	(cfs)	(ft)
15000 SOUTH (FUTURE)	210+86	HERRIMAN CITY	2	3	4722
15000 SOUTH	210+86	JVWCD	6.08	9.4	4722
14400 SOUTH	251+66	BLUFFDALE CITY	4	6	4712
RIVERTON PUMP STATION	293+95	RIVERTON CITY	2	3	4703
13400 SOUTH	317+03	SOUTH JORDAN	20.7	32	4698

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN
DRAWN R. DARGER
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

GENERAL

OVERALL HYDRAULIC PROFILE AND DESIGN CRITERIA

DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. G-3

SHEET 3 OF 110

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		GENERAL	
1	G-1	PROJECT LOCATION MAP, AND VICINITY MAP	0100803_G-01.dwg
2	G-2	DRAWING INDEX MAP, HORIZONTAL ALIGNMENT CONTROL, AND SURVEY CONTROL	0100803_G-02.dwg
3	G-3	OVERALL HYDRAULIC PROFILE AND DESIGN CRITERIA	0100803_G-03.dwg
4	G-4	INDEX TO DRAWINGS	0100803_G-04.dwg
5	G-5	GENERAL NOTES, AND SYMBOLS	0100803_G-05.dwg
6	G-6	ABBREVIATIONS	0100803_G-06.dwg
7	G-7	SYMBOLS	0100803_G-07.dwg
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9	PP-2	SWA PLAN & PROFILE - 2 STA 209+00 TO STA 219+00	0100803_PP-02.dwg
10	PP-3	SWA PLAN & PROFILE - 3 STA 219+00 TO STA 229+00	0100803_PP-03.dwg
11	PP-4	SWA PLAN & PROFILE - 4 STA 229+00 TO STA 239+00	0100803_PP-04.dwg
12	PP-5	SWA PLAN & PROFILE - 5 STA 239+00 TO STA 249+00	0100803_PP-05.dwg
13	PP-6	SWA PLAN & PROFILE - 6 STA 249+00 TO STA 259+00	0100803_PP-06.dwg
14	PP-7	SWA PLAN & PROFILE - 7 STA 259+00 TO STA 270+00	0100803_PP-07.dwg
15	PP-8	SWA PLAN & PROFILE - 8 STA 270+00 TO STA 280+00	0100803_PP-08.dwg
16	PP-9	SWA PLAN & PROFILE - 9 STA 280+00 TO STA 290+00	0100803_PP-09.dwg
17	PP-10	SWA PLAN & PROFILE - 10 STA 290+00 TO STA 300+00	0100803_PP-10.dwg
18	PP-11	SWA PLAN & PROFILE - 11 STA 300+00 TO STA 310+00	0100803_PP-11.dwg
19	PP-12	SWA PLAN & PROFILE - 12 STA 310+00 TO STA 319+36.38	0100803_PP-12.dwg
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21	PP-14	13400 S. PUMP STATION INTERCONNECTION PLAN AND PROFILE	0100803_PP-14.dwg
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23	C-2	ENLARGED CIVIL PLANS (RIVERTON PUMP STATION)	0100803_C-02.dwg
24	C-3	ENLARGED CIVIL PLANS (13400 SOUTH MAINLINE INTERCONNECTION PIPING AND VAULT)	0100803_C-03.dwg
25	C-4	PROFILES - 1	0100803_C-04.dwg
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27	C-5	CROSS SECTIONS	0100803_C-05.dwg
28	C-6	CROSS SECTIONS	0100803_C-06.dwg
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30	C-8	CATHODIC PROTECTION DETAILS	0100803_C-08.dwg
31	C-9	CATHODIC PROTECTION DETAILS	0100803_C-09.dwg
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41	C-18	PLAN AND PROFILE-2 STA 105+00 TO STA 110+00	0100803_C-18.dwg
42	C-19	PLAN AND PROFILE-3 STA 110+00 TO STA 115+00	0100803_C-19.dwg
43	C-20	PLAN AND PROFILE-4 STA 115+00 TO STA 120+00	0100803_C-20.dwg
44	C-21	PLAN AND PROFILE-5 STA 120+00 TO STA 125+00	0100803_C-21.dwg
45	C-22	PLAN AND PROFILE-6 STA 125+00 TO STA 130+00	0100803_C-22.dwg
46	C-23	PLAN AND PROFILE-7 STA 130+00 TO STA 135+00	0100803_C-23.dwg
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54	C-31	3200 WEST STRIPING PLAN	0100803_C-31.dwg
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57	GC-3	CIVIL DETAILS - 3	0100803_DC-03.dwg
58	GC-4	CIVIL DETAILS - 4	0100803_DC-04.dwg
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66	M-3	JVWTP CONNECTION VAULT - SECTIONS	0100803_M-03.dwg
67	M-4	JVWTP CONNECTION VAULT - SECTIONS	0100803_M-04.dwg
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77	GM-3	GENERAL MECHANICAL DETAILS - 3	0100803_GM-03.dwg
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81	S-3	JVWTP INTERCONNECTION VAULT SECTIONS	0100803_S-03.dwg
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90	GS-2	GENERAL STRUCTURAL DETAILS - 1	0100803_GS-02.dwg
91	GS-3	GENERAL STRUCTURAL DETAILS - 2	0100803_GS-03.dwg
92	GS-4	GENERAL STRUCTURAL DETAILS - 3	0100803_GS-04.dwg
93	GS-5	GENERAL STRUCTURAL DETAILS - 4	0100803_GS-05.dwg
94	GS-6	GENERAL STRUCTURAL DETAILS - 5	0100803_GS-06.dwg
95	GS-7	GENERAL STRUCTURAL DETAILS - 6	0100803_GS-06.DWG
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98	E-2	JVWTP INTERCONNECTION AND METER VAULT ELECTRICAL SITE PLAN	0100803_E-02.dwg
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103	E-7	JVWTP INTERCONNECTION AND METER VAULT ONE-LINE DIAGRAM	0100803_E-07.dwg
104	E-8	13400 SOUTH MAINLINE VALVE AND INTERCONNECTION VAULT ELECTRICAL PLAN	0100803_E-08.dwg
105	E-9	13400 SOUTH MAINLINE VALVE AND INTERCONNECTION VAULT ELECTRICAL PLAN	0100803_E-09.dwg
106	E-10	13400 SOUTH VALVE AND INTERCONNECTION VAULT ONE-LINE DIAGRAMS	0100803_E-10.dwg
107	E-11	13400 SOUTH MAINLINE VALVE AND INTERCONNECTION VAULT ONE-LINE DIAGRAM	0100803_E-11.dwg
108	E-12	CONTROL SCHEMATIC DETAILS	0100803_E-12.dwg
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110	E-14	ELECTRICAL DETAILS - 2	0100803_E-14.dwg
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		RIVERTON CITY STANDARD DRAWINGS	

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DRAWN B. ABEL

REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

GENERAL

INDEX OF DRAWINGS

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

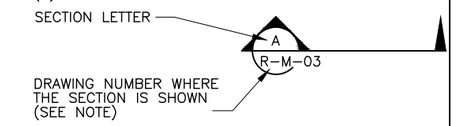
DRAWING NO. G-4

SHEET 4 OF 110

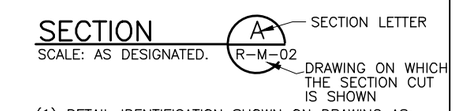
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_G04.dwg Nov10,2011 - 9:02am

SECTION IDENTIFICATION

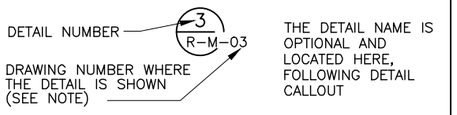
(1) SECTION CUT SHOWN ON DRAWING AS:



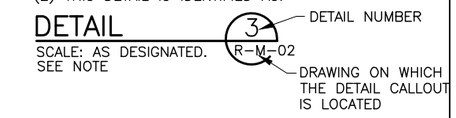
(2) THIS SECTION IS IDENTIFIED AS:



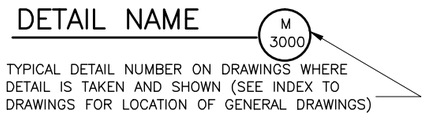
(1) DETAIL IDENTIFICATION SHOWN ON DRAWING AS:



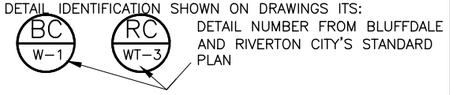
(2) THIS DETAIL IS IDENTIFIED AS:



TYPICAL DETAIL IDENTIFICATION



BLUFFDALE AND RIVERTON CITY'S DETAIL IDENTIFICATION
DETAIL IDENTIFICATION SHOWN ON DRAWINGS ITS:



DRAWING IDENTIFICATION SYSTEM

LETTER	DISCIPLINE
G	GENERAL
C	CIVIL
S	STRUCTURAL
M	MECHANICAL
E	ELECTRICAL
PA	APPURTENANT STRUCTURES
PP	PLAN AND PROFILE
D	DETAILS
GC,GM,GS	GENERAL CIVIL, GENERAL MECHANICAL, GENERAL SRUCTURAL

S-2
- INDIVIDUAL DRAWING NUMBER
- DISCIPLINE

NOTES:

A. IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A HORIZONTAL LINE.

B. PREFIX LETTER INDICATES THE FOLLOWING: C-CIVIL, S-STRUCTURAL, M-MECHANICAL, E-ELECTRICAL.

C. ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL SHEETS FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS. SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.

D. IF SECTION AND/OR DETAILS ARE THE SAME SCALE AND ON THE SAME DRAWING, SEE TITLE BLOCK AT "SCALE:"; THE SCALE TEXT AT CALLOUT SHALL BE OMITTED.

GENERAL NOTES

1. SYMBOLS FOR STRUCTURES, PIPE, ETC. USED FOR IDENTIFICATION ARE SHOWN IN LEGENDS AND SHALL BE FOLLOWED THROUGHOUT THE PLANS WHENEVER APPLICABLE. NOT ALL OF THE VARIOUS COMPONENTS SHOWN IN THESE LEGENDS ARE NECESSARILY USED IN THE PROJECT.
2. SCALE OF THE DRAWINGS OR DETAILS ARE SHOWN IN TITLE BLOCK OR DIRECTLY UNDER THE PLAN OR DETAIL. THE SIZE OF THE ORIGINAL PLOTTED DRAWINGS IS 22"X34". CARE SHOULD BE TAKEN TO REVIEW AND VERIFY THE SCALE BAR IN THE TITLE BLOCK AREA TO DETERMINE THE SCALE OF REDUCED REPRODUCTIONS.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PERFORM CONSTRUCTION ACTIVITIES PER THE CONTRACT DOCUMENTS. ANY ADDITIONS, DELETIONS, OR MODIFICATIONS SHALL FIRST MEET WITH THE WRITTEN APPROVAL OF THE ENGINEER AND THE OWNER.
4. THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE ESTABLISHED ROAD R/W, EASEMENTS AND DESIGNATED STAGING AREA. THIS SHALL INCLUDE BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF TRENCH EXCAVATION, AND EXCAVATED MATERIAL AND BACKFILL STORAGE. IF THE CONTRACTOR REQUIRES ADDITIONAL CONSTRUCTION EASEMENTS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH EASEMENTS FROM INDIVIDUAL PROPERTY OWNERS.
5. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE WHICH ARE TO REMAIN IN PLACE. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO ORIGINAL OR BETTER CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.
6. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES. CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF THE PUBLIC AND PROTECTION OF PERSONNEL AND WORKERS. TRENCH SUPPORTS AND DEWATERING SHALL BE RESPONSIBILITY OF THE CONTRACTOR.
7. IF THE CONTRACTOR CHOOSES TO WORK ON THE PROJECT WHEN HOT MIX ASPHALT IS NOT AVAILABLE, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE GOVERNING AGENCY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY ASPHALT SURFACING MATERIAL. WHEN PERMANENT ASPHALT BECOMES AVAILABLE, THE CONTRACTOR SHALL REMOVE THE TEMPORARY ASPHALT, FURNISH AND INSTALL THE PERMANENT ASPHALT AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL NOT DESTROY, REMOVE, OR DISTURB ANY EXISTING SURVEY MONUMENTS WITHOUT AUTHORIZATION OF CONTROLLING AGENCY. NO PAVEMENT CUTTING OR REMOVAL SHALL BEGIN UNTIL ALL SURVEY MARKERS OR MONUMENT POINTS THAT HAVE THE POTENTIAL OF BEING DISTURBED BY THE CONSTRUCTION OPERATIONS HAVE BEEN PROPERLY REFERENCED BY A REGISTERED LAND SURVEYOR. ALL SURVEY MONUMENTS OR POINTS DISTURBED BY THE CONTRACTOR SHALL BE ACCURATELY RESET BY A REGISTERED LAND SURVEYOR AFTER ALL RESTORATION AND RESURFACING HAS BEEN COMPLETED.
9. CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW A SEQUENTIAL PLAN DETAILING PROPOSED CONNECTION PROCEDURES IN ACCORDANCE WITH THE CONSTRUCTION SCHEDULE CONSTRAINTS DESCRIBED IN SECTION 01010 – SUMMARY OF WORK.
10. CONTRACTOR TO PROVIDE AND DISTRIBUTE WRITTEN NOTICE OF CONSTRUCTION ACTIVITIES TO ALL RESIDENTS AND BUSINESSES LOCATED IN THE CONSTRUCTION AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. WRITTEN NOTICE SHALL BE APPROVED BY THE ENGINEER PRIOR TO DISTRIBUTION.
11. CONTRACTOR SHALL PROVIDE AND UPDATE A CONSTRUCTION SCHEDULE IN ACCORDANCE WITH THE SPECIFICATIONS FOR WORKING IN THE PUBLIC RIGHT-OF-WAY PRIOR TO CONSTRUCTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY SETTLEMENT OF BACKFILL, AND ANY DAMAGE OF UTILITIES RESULTING FROM SETTLEMENT.
13. LAY PIPE TO DEPTH AND ALONG HORIZONTAL ALIGNMENT AS DEFINED IN THESE DRAWINGS. CONTRACTOR SHALL NOT DEVIATE FROM PROPOSED ALIGNMENT OR GRADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
14. WHERE ENGINEER DETERMINES MECHANICAL COMPACTION CANNOT BE ADEQUATELY PERFORMED CONTRACTOR SHALL BACKFILL TRENCH AREAS WHERE NEW WATERLINES CROSS UNDER EXISTING BURIED UTILITIES WITH FLOWABLE FILL (CONTROLLED LOW STRENGTH MATERIAL) IN ACCORDANCE WITH SPECIFICATIONS.
15. CONTRACTOR SHALL SAW CUT ASPHALT, SIDEWALK, AND WHERE REQUIRED CURB AND GUTTER AT THE LIMITS OF ALL TRENCH EXCAVATION.
16. SIZE OF FITTINGS SHOWN ON THE PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
17. CONTRACTOR SHALL PROTECT ADJACENT PRESSURE PIPELINES AND PROVIDE TEMPORARY THRUST RESTRAINT AS NECESSARY DURING CONSTRUCTION. ALL NEW PRESSURE PIPE AND FITTINGS SHALL HAVE THRUST RESTRAINED JOINTS, THRUST BLOCKS, THRUST TIES OR OTHER APPROVED THRUST RESTRAINT.
18. HORIZONTAL CONTROL IS DEFINED BY THE LOCAL PROJECT CONTROL SYSTEM. DRAWING G-2 SHOWS GROUND COORDINATES FOR SURVEY CONTROL MONUMENTS IN THE PROJECT AREA. ALL COORDINATES, BEARINGS, DISTANCES, AND STATIONS SHOWN ON THE DRAWINGS ARE GROUND.
19. EXISTING UTILITIES SHOWN ON THE PLANS ARE BASED UPON A RECORD SEARCH OF LOCAL CONTROLLING AGENCIES AND ARE APPROXIMATELY LOCATED. EXISTING UTILITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. AT LEAST 2 WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR SHALL CONTACT "BLUE STAKES" AT 1 (800) 662-4111 FOR MARK OUT OF EXISTING UTILITIES. IT WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DIRECTLY CONTACT ANY OTHER UTILITY COMPANIES THAT ARE NOT MEMBERS OF BLUE STAKES. NOTIFY ENGINEER IMMEDIATELY OF ANY UTILITIES IDENTIFIED THAT ARE NOT SHOWN ON THE DRAWINGS.
20. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE, TYPE, AND ELEVATION OF ALL UTILITIES PRIOR TO CONSTRUCTION BY POT HOLING A MINIMUM OF 400 FEET IN ADVANCE OF TRENCHING OPERATIONS TO CONFIRM CLEARANCE FROM THE PROPOSED PIPELINE. REPORT ANY CONFLICTS TO THE ENGINEER.
21. EXCAVATION LIMITS SHOWN IN THE DETAILS ARE GRAPHICAL REPRESENTATIONS ONLY AND DO NOT REPRESENT ACTUAL EXCAVATION LIMITS OR SAFE TRENCH CONDITIONS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING THE TRENCH LIMITS NEEDED FOR THE WORK AND CONFORMANCE WITH THE LOCAL, STATE, AND FEDERAL CODES GOVERNING SHORING, SHEETING, AND BRACING OF EXCAVATIONS AND TRENCHES, AND FOR PROTECTION AND SAFETY OF WORKERS AND OTHER CONSTRUCTION RELATED PERSONNEL.
22. UNLESS OTHERWISE NOTED, ALL ELEVATIONS FOR NEW CONSTRUCTED PIPELINES ARE PIPE CENTERLINE ELEVATIONS. VPI ELEVATIONS ARE PROVIDED FOR VERTICAL CURVES. ELEVATIONS OF EXISTING UTILITIES ARE CALLED OUT TO INVERT ELEVATION FOR GRAVITY UTILITIES (I.E. STORM DRAINS, SEWER, ETC.) AND TOP OF PIPE FOR PRESSURE PIPELINES, DRY CONDUITS, AND ALL OTHER BURIED UTILITIES.
23. ALL STATIONING AND DISTANCES SHOWN ON THE DRAWINGS ARE BASED ON HORIZONTAL MEASUREMENTS.
24. THE SOUTHWEST AQUEDUCT SHALL BE TESTED TO THE TEST PRESSURES SHOWN ON DRAWING G-3. ALL PIPELINE MATERIALS AND APPURTENANCES SHALL BE DESIGNED TO WITHSTAND THE FULL TEST PRESSURES.
25. THE LOCATIONS OF AIR VALVES, BLOWOFF ASSEMBLIES, AND OUTLETS ARE SHOWN IN THEIR APPROXIMATE LOCATION. THE EXACT LOCATION MAY BE ALTERED IN THE FIELD BY THE ENGINEER.
26. CONTRACTOR SHALL ENSURE THAT OPERATION OF EXISTING IRRIGATION, SEWER, DRAINAGE, DOMESTIC WATER, AND OTHER UTILITY SYSTEMS ARE IN CONTINUOUS OPERATION DURING CONSTRUCTION. WHERE IT IS NECESSARY TO REMOVE AND REPLACE OR TO RELOCATE UTILITIES OR SERVICE LATERALS IN ORDER TO PROSECUTE THE WORK, THEY SHALL BE REMOVED, MAINTAINED, AND PERMANENTLY REPLACED BY THE CONTRACTOR, AT CONTRACTORS EXPENSE, AND TO THE SATISFACTION AND STANDARDS OF THE UTILITY OWNER.
27. UTILITY SERVICE LATERALS ARE NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL ANTICIPATE THAT THERE ARE NO LESS SERVICE LATERALS THAN THERE ARE HOMES WHERE PROJECT TRENCHES ARE LOCATED IN OR WITHIN 100 FEET OF A STREET BETWEEN A HOME AND THE UTILITY MAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT IN PLACE, OR REMOVE AND REPLACE TO THE SATISFACTION OF THE UTILITY OWNER, ALL UTILITY SERVICE LATERALS ENCOUNTERED DURING CONSTRUCTION. DURATION OF UTILITY SERVICE OUTAGES AND PUBLIC NOTIFICATION PROCEDURES SHALL CONFORM TO THE STANDARDS OF THE CONTROLLING AGENCY.
28. THE PIPELINE CROSSES AND PARALLELS OVERHEAD ELECTRIC TRANSMISSION AND UNDERGROUND NATURAL GAS TRANSMISSION LINES. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE WORKING IN THE VICINITY OF THESE TRANSMISSION LINES.
29. RELOCATIONS AND/OR REPLACEMENTS OF EXISTING UTILITIES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY OWNER. CONTRACTOR SHALL CONTACT, SCHEDULE, AND ESTABLISH UTILITY SHUT DOWN TIMES AND DETERMINE THE RELOCATION AND/OR REPLACEMENT REQUIREMENTS OF EXISTING UTILITIES PRIOR TO THE START OF ANY WORK AT NO COST TO THE DISTRICT.
30. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMIT(S) AND COMPLY WITH ALL REQUIREMENTS OF GOVERNING AGENCIES. REFER TO SPECIFICATION SECTION 01450 – PERMITS.
31. THE CONTRACTOR SHALL PREPARE AND SUBMIT TRAFFIC CONTROL PLANS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION AS REQUIRED BY BLUFFDALE CITY, AND RIVERTON CITY. CONFORM WITH ALL REQUIREMENTS OF THE GOVERNING AGENCIES INCLUDING, BUT NOT LIMITED TO, VMS NOTIFICATION BOARDS, LANE CLOSURES, PUBLIC NOTIFICATIONS, AND NOTIFICATIONS TO EMERGENCY SERVICES AND OTHER PUBLIC SERVICES THAT WILL BE IMPACTED BY THE PROJECT. REFER TO SECTION 01506, TRAFFIC CONTROL.
32. GEOTECHNICAL BORING DATA IS PROVIDED APPROXIMATELY EVERY 1,000 LF ALONG PIPELINE ALIGNMENT. BORING LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. REFER TO GEOTECHNICAL REPORT PREPARED BY GEOSTRATA, INC. DATED MARCH 3, 2009 FOR INFORMATION REGARDING SUBSURFACE CONDITIONS THAT MAY BE PRESENT ALONG ALIGNMENT.
33. EXISTING PARALLEL SANITARY SEWER LINE SHOWN IN PROFILE FOR CONTRACTOR'S CONVENIENCE ONLY. SEWER PROFILE DOES NOT INCLUDE ALL MANHOLES AND IS NOT INTENDED TO BE A COMPLETE ILLUSTRATION OF THIS LINE. CONTRACTOR TO VERIFY ALL UTILITY LOCATION DATA IN FIELD PRIOR TO TRENCHING.
34. CONTRACTOR SHALL SECURE ALL OPEN PIPE TRENCH WITHIN PUBLIC RIGHT-OF-WAYS AND RESIDENTIAL AREAS DURING ALL NON-WORKING HOURS WITH 6-FT HIGH TEMPORARY CHAIN LINK FENCING PANELS AND APPROPRIATE TRAFFIC CONTROL DEVICES. SECURITY FENCING MAY NOT BE REQUIRED IN OPEN UNIMPROVED RIGHT-OF-WAYS IF CONTRACTOR DEMONSTRATES THAT TRENCHES CAN BE CUT BACK TO PROVIDE SAFE ACCESS WITHOUT SHORING DEVICES IN ACCORDANCE WITH OSHA STANDARDS.
35. CONTRACTOR SHALL INSTALL AQUEDUCT MARKING POSTS ON THE CENTERLINE OF AQUEDUCT AT THE BEGINNING AND END OF OPEN CORRIDORS AND AT A MINIMUM OF 500-FOOT INTERVALS, SEE SECTION 02570 FOR MARKING POST TYPE.
36. CONTRACTORS ATTENTION IS DRAWN TO SPECIFIC REQUIREMENTS OF SECTION 01506 – TRAFFIC CONTROL AND SECTION 01550 – PUBLIC INFORMATION PROGRAM FOR REQUIREMENTS WHEN WORKING IN PUBLIC RIGHT-OF-WAYS ALONG 3200 WEST AND AT MAJOR STREET CROSSINGS.
37. REFERENCE THE LATEST EDITION OF APWA STANDARD PLANS AND SPECIFICATIONS FOR ITEMS NOT INCLUDED IN THE BLUFFDALE AND RIVERTON CITY STANDARD PLANS
38. THE OPEN ENDS OF THE PIPELINE UNDER CONSTRUCTION SHALL BE COVERED AND EFFECTIVELY SEALED AT THE END OF THE DAYS WORK.
39. ALL MATERIALS WHICH MAY CONTACT DRINKING WATER, INCLUDING PIPES, GASKETS, LUBRICANTS AND O-RINGS, SHALL BE ANSI-CERTIFIED AS MEETING THE REQUIREMENTS OF NSF STANDARD 61, DRINKING WATER SYSTEM COMPONENTS – HEALTH EFFECTS. TO PERMIT FIELD VERIFICATION OF THIS CERTIFICATE, ALL SUCH COMPONENTS SHALL BE APPROPRIATELY STAMPED WITH THE NSF LOGO.

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN B. ABEL
CHECKED M. COLLINS
APPROVED J. LUETTINGER

GENERAL

GENERAL NOTES AND SYMBOLS

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. G-5
SHEET 5 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_G05.dwg Nov10,2011 – 9:08am

@	AT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABBR	ABBREVIATION
ABS	ACRYLONITRILE–BUTADIENE–STYRENE
AC	ASPHALTIC CONCRETE OR ALTERNATING CURRENT OR ACTIVATED CARBON
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALTIC CONCRETE PAVEMENT
ADDL	ADDITIONAL
ADJ	ADJACENT OR ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AH	AIR HANDLER
AIR CONT	AIR CONDITIONING
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM, ALUM
ALTN	ALTERNATIVE, ALTERNATE
ANOD	ANODIZED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APVD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVAR	AIR VACUUM AND AIR RELEASE VALVE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGIN CURVE, BOLT CIRCLE
BF	BLIND FLANGE, BUTTERFLY VALVE
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHD	BULKHEAD
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK OR BLOCK
BLKG	BLOCKING
BLT	BOLT
BM	BEAM, BENCH MARK
BO	BLOW–OFF ASSEMBLY, BLOW–OFF
BOT	BOTTOM
BPS	BOOSTER PUMPING STATION
BPV	BACK PRESSURE VALVE
BRK	BRICK
B & S	BELL & SPIGOT
BTWN	BETWEEN
BTU	BRITISH THERMAL UNIT
BUR	BUILT–UP ROOFING
BVC	BEGIN VERTICAL CURVE
BW	BACK WASH, FILTER BACKWASH
C	CENTIGRADE OR CELSIUS
CAB	CABINET
CAP	CAPACITY
CARV	COMBINATION AIR RELEASE VALVE
CB	CATCH BASIN
CC	CENTER TO CENTER
CCP	CONCRETE CYLINDER PIPE
CD	CEILING DIFFUSER CHEMICAL DRAIN AND VENT
CER	CERAMIC
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CG	CHLORINE GAS
CHBD	CHALKBOARD
CHEM	CHEMICAL
CHG	CHANGE
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CHLORINATOR, CHAIN LINK, CLEARANCE, CENTERLINE OR CHLORINE
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CLST	CEMENT LINED STEEL PIPE
CM	CENTIMETER
CML & C	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
COMB	COMBINED
CONC	CONCRETE, CONCENTRIC
COND	CONDENSER, CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCTION, CONSTRUCT
CONT	CONTINUED, CONTINUOUS, CONTINUATION
COORD	COORDINATE
COTG	CLEAN–OUT TO GRADE
COP	COPPER
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAST STEEL OR CAUSTIC SODA
CTRD	CENTERED
CTR	CENTER
CTSK	COUNTERSUNK
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
CV	CHECK VALVE
CW	COLD WATER
CWO	CHAIN WHEEL OPERATOR
CYL	CYLINDER
d	PENNY
DBA	DEFORMED ANCHOR
DBL	DOUBLE
DC	DIRECT CURRENT
DET	DETAIL
DEG	DEGREE
DEMO	DEMOLITION, DEMOLISH
DI	DUCTILE IRON, DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIR	DIRECTION
DIST	DISTANCE
DIV	DIVISION
D–LOAD	LOADING CONDITION FOR RCP
DMPR	DAMPER
DN	DOWN, DECANT
DOT	DEPARTMENT OF TRANSPORTATION
DP	DAMP PROOFING
DR	DOOR, DRAIN
DS	DRENCH SHOWER & EYE WASH, DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
E(UG)	ELECTRICAL (UNDERGROUND)
E(OH)	ELECTRICAL (OVERHEAD POWER)
E	EAST
EA	EACH
EB	EXPANSION BOLT
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE, EXHAUST FAN
EFF	EFFLUENT
EG	EXISTING GRADE
EL	ELEVATION, ELBOW
ELEV	ELEVATION
ELEC	ELECTRICAL, ELECTRONIC
EMB	EMBEDMENT
EMER	EMERGENCY
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
EP	EDGE OF PAVEMENT
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ETC	ETCETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY, EYE WASH
EXH	EXHAUST
EXP ANR	EXPANSION BOLT, ANCHOR
EXP JT	EXPANSION JOINT
EXIST	EXISTING
EXT	EXTERIOR, EXTENSION, EXTERNAL
F	FAHRENHEIT, FACE
FAB	FABRICATION, FABRICATE, OR FABRICATED
FB	FLAT BAR
FC	FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FDR	FEEDER
FEXT	FIRE EXTINGUISHER
FF	FLAT FACE, FAR FACE, FINISH FLOOR
F TO F	FACE TO FACE
FG	FINISH GRADE, FLOW GLASS
FH	FIRE HYDRANT
FLR	FLOOR
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FND	FOUND
FNSH	FINISH
FO	FIBER OPTIC
FWR	FINISH WATER RESERVIOR
G	GAS
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GI	GALVANIZED IRON
GIS	GEOGRAPHIC INFORMATION SYSTEM
GL	GLASS
GLAZ	GLAZING
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GR BRK	GRADE BREAK, GRADE CHANGE
GRTG	GRATING
GV	GATE VALVE
GSP	GALVANIZED STEEL PIPE
GYP	GYPSUM BOARD
H	HEIGHT
HAS	HEADED ANCHOR STUD
HB	HOSE BIBB
HD	HUB DRAIN
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGONAL
HGR	HANGER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER, HIGH PRESSURE, HEAT PUMP
H/P, HPT	HIGH POINT
HR	HEATING RETURN, HOUR, HOSE RACK
HS	HIGH STRENGTH
HTG	HEATING
HTR	HEATER
HV	HOSE VALVE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRANT, HYDRAULIC
ICFM	INLET CUBIC FEET PER MINUTE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
IN LB	INCH–POUND
INFL	INFLUENT
INSUL	INSULATING
IE	INVERT ELEVATION
INVT	INVERT
IPS	IRON PIPE SIZE
IRR	IRRIGATION
JA2	JORDAN AQUEDUCT REACH – 2
JT	JOINT
JVWTP	JORDAN VALLEY WATER TREATMENT PLANT
JVWCD	JORDAN VALLEY WATER CONSERVANCY DISTRICT
K	KELVIN, KILO OR THOUSAND POUNDS
KG	KILOGRAM
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LEFT OR LITER
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LC	LENGTH OF CURVE
LF	LINEAR FEET
LG	LENGTH OR LONG
LH	LEFT HAND
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LOL	LENGTH OF LINE
LPT	LOW POINT
LR	LONG RADIUS
LT	LIGHT, LEFT
LVL	LEVEL
LWL	LOW WATER LEVEL
LWR	LOWER
M	METER, MALE (PIPE THREAD)
MACH	MACHINE
MAN	MAGNETIC
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL, MECHANISM
MEMB	MEMBRANE
MET	METAL
MFR	MANUFACTURER
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE, MONORAIL HOIST
MI	MALLEABLE IRON
MID	MIDDLE
MIL	1/1,000 INCH
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MLMC	MORTAR LINED MORTAR COATED
MLPC	MORTAR LINED POLYURETHANE COATED
MTL	METAL OR MATERIAL
MTG	MOUNTING
MTR	MOTOR
MPH	MILES PER HOUR
MWS	MAXIMUM WATER SURFACE
N	NORTH
NAVD	NORTH AMERICAN VERTICAL DATUM
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NE	NORTHEAST
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER OR NORMALLY OPEN
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NS	NEAR SIDE
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER, OVER–CROSSING
OD	OUTSIDE DIAMETER, OVERALL DIMENSION
OF	OUTSIDE FACE
OH	OVERHEAD
OPER	OPERATOR, OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
O TO O	OUT TO OUT
OVHD	OVERHEAD
OZ	OUNCE
PV	PAVEMENT
PC	PORTLAND CEMENT, POINT OF CURVE OR PRIMARY CLARIFIER
PCC	PORTLAND CEMENT CONCRETE
PCF	POUNDS PER CUBIC FOOT
PG	PRESSURE GAUGE
PE	PLAIN END, POLYELECTROLYTE POLYMER, POLYETHYLENE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT, POINT OF INTERSECTION
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE, PLACE
PLYWD	PLYWOOD
PM	PUMP, PROPELLER METER, POST MARKER
PI	POINT OF BEGINNING
PT	POINT OF TANGENT
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE, OR PLACE
PP	POTASSIUM PERMANGANATE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PRI	PRIMARY
PRV	PRESSURE REGULATING/REDUCING VALVE
PS	PRESSURE SWITCH, PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENT, PRESSURE TREATED
PTDF	PRESSURE TREATED DOUGLAS FIR
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PW	POTABLE WATER
POB	POINT OF BEGINNING
POE	POINT OF ENDING
R	RIGHT
RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	RESERVOIR DRAIN OR ROAD
RDCR	REDUCER, REDUCING
RECIRC	RECIRCULATION
RED	REDUCING
REF	REFERENCE, REFER
REG	REGULATING, REGISTER
REINF	REINFORCE, REINFORCED
REQD	REQUIRED
REV	REVISION
RF	ROOF, RAISED FACE
RND	ROUND
RPM	REVOLUTIONS PER MINUTE
RP	RADIUS POINT
RST	REINFORCING STEEL, RESET
RT	REGULATING TANK, RADIOGRAPHIC, RIGHT
RV	ROOF VENT
ROW	RIGHT OF WAY
R/W	RIGHT OF WAY
RW	RAW WATER
S	SOUTH, SECOND
SA	SAMPLE, SAMPLE LINE
SR	SUPPLY AIR REGISTER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SP	SPACING, STATIC PRESSURE
SPEC	SPECIFIED, SPECIFICATION
SPECS	SPECIFICATIONS
SPG	SPACING
SPKR	SPEAKER
SPLY	SUPPLY
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SR	SUPPLY REGISTER
SS	SANITARY SEWER, SERVICE SINK
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRL	STRUCTURAL
SWA	SOUTHWEST AQUEDUCT
SYM	SYMBOL
SYMM	SYMMETRICAL
SYS	SYSTEM
T	THICKNESS, TOP, TOILET
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TBM	TEMPORARY BENCH MARK
TBC	TOP OF CATCH BASIN
TC	TOP OF CURB, TOP OF CONCRETE
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
THK	THICK
THR'D	THREADED
TK	TANK
T.O.	TOP OF
TOG	TOP OF GRADE
TP	TELEPHONE POLE, TURNING POINT
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
ULDC	UTAH LAKE DISTRIBUTION CANAL
UNO	UNLESS OTHERWISE NOTED
USBR	U.S. BUREAU OF RECLAMATION
V	VALVE, VENT, VOLT, VACUUM
VAR	VARIES, OR VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VTC	VENT THROUGH CEILING
VTR	VENT THROUGH ROOF
VSS	VOLATILE SUSPENDED SOLIDS
W	WEST, WASTE, WIDE FLANGE (BEAM)
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN OR WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WH	WATER HEATER
WS	WATER STOP, WATER SURFACE
WSP	WELDED STEEL PIPE
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
XMTR	TRANSMITTER
XS	EXTRA STRONG
YD	YARD
YR	YEAR

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DRAWN B. ABEL

REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

GENERAL

ABBRAVIATIONS

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. G-6

SHEET 6 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_G06.dwg Nov14,2011 – 3:56pm

- MANHOLE
- W — WATER
- SS — SANITARY SEWER
- SD — STORM DRAIN
- OHP — OVERHEAD POWER
- TEL — TELEPHONE
- PI, PT, PC — NEW PIPELINE SMALLER THAN 36" DIA
- PROPERTY LINE OR EASEMENT
- FENCE
- GATE VALVE
- BUTTERFLY VALVE
- CONCENTRIC REDUCER
- GRAVEL SURFACE
- CONCRETE
- GRANULAR BACKFILL
- EARTH
- INDICATES AREAS OR ITEMS TO BE REMOVED
- T — TYPE 'T' CORROSION MONITORING TEST STATION
- F — TYPE 'F' CORROSION MONITORING TEST STATION
- A — TYPE 'A' CORROSION MONITORING TEST STATION
- TRAFFIC CONTROL CABINET
- JUNCTION BOX
- TRAFFIC LOOP SENSORS
- POWER POLE WITH LIGHT
- STREET MONUMENT
- POWER POLE
- SIGN
- FIRE HYDRANT
- WM — WATER METER
- STORM DRAIN CATCH BASIN
- SURVEY CONTROL POINT
- THRUST BLOCK
- BENCH MARK
- HORIZONTAL OR VERTICAL POINT OF INTERSECTION
- BLOWOFF
- AIR VALVE
- ACCESS MANWAY
- TP–2 — TEST PIT LOCATION AND NUMBER
- BH–2 — BORING LOCATION AND NUMBER
- PH–2 — POT HOLE LOCATION AND NUMBER

- MASONRY
- CAST IRON
- STEEL
- BRONZE
- INSULATION
- GRAVEL
- CONCRETE
- EARTH
- SAND
- ALUMINUM OR METAL DECKING
- CHECKERED PLATE
- SPAN — GRATING
- PLASTIC, RUBBER OR NEOPRENE
- WOOD (FINISH)
- WOOD (ROUGH FRAMING) OR, OPENING OR DEPRESSION IN SLAB OR WALL
- 12 X 24 / 24 X 12 — DUCT (FIRST DIMENSION DUCT SIDE SHOWN, SECOND DIMENSION DUCT SIDE NOT SHOWN)
- SUPPLY OR OUTSIDE AIR DUCT (FIRST DIMENSION, DUCT WIDTH)
- 24 X 12 — EXHAUST OR RETURN AIR DUCT (FIRST DIMENSION, DUCT WIDTH)
- SIZE / CFM — CEILING SUPPLY DIFFUSER (SIZE IN INCHES)
- SIZE / CFM — CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- SIZE / CFM — EXHAUST OR RETURN AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- SIZE / CFM — SUPPLY GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- AIR TURNING VANES IN DUCT
- DD — DEFLECTING DAMPER
- FHC — FIRE HOSE CABINET
- FE — FIRE EXTINGUISHER
- UNIT HEATER
- CENTERLINE
- PROPERTY LINE
- NEW STRUCTURE OR FACILITY
- EXISTING STRUCTURE OR FACILITY
- FUTURE STRUCTURE OR FACILITY
- NEW FENCE
- EXISTING FENCE
- NEW PIPELINE (CIVIL SHEETS)
- NEW PIPELINE (CIVIL SHEETS) 10" DIA. AND SMALLER
- EXISTING PIPELINE
- PIPELINE MARKER

- 123 — CONTOUR LINE, FINISHED GRADE
- 123 — CONTOUR LINE, EXISTING GRADE
- 123.20 — FINISHED ELEVATION
- (123.20) — EXISTING ELEVATION
- TOP / TOE — CUT OR FILL SLOPE TO BE CONSTRUCTED
- NEW A.C. PAVING
- EXISTING A.C. PAVING
- RAILING
- FH — FIRE HYDRANT
- MH — MANHOLE
- PCOTG — PRESSURE CLEANOUT TO GRADE
- WCO — WALL CLEANOUT
- FCO — FLOOR CLEANOUT
- COTG — CLEANOUT TO GRADE
- BLOW OFF ASSEMBLY
- HUB DRAIN
- FLOOR DRAIN
- FLOOR SINK
- DRAIN TRAP
- VAULT OR JUNCTION STRUCTURE
- CHANGE IN PIPING MATERIAL
- ROUND OR DIAMETER
- SQUARE
- AT
- ANGLE
- 24" RCP–RW — PIPE SIZE AND TYPE/FLUID ABBREVIATION (USE FOR EXISTING PIPE CALLOUT)
- 2" UW (2) — PIPE CALLOUT (SEE PIPING SCHEDULE)
- ME–2 — EQUIPMENT NUMBER (SEE EQUIPMENT SCHEDULE)
- BACKWATER VALVE
- BACKFLOW PREVENTER
- STOP GATE
- SLIDE GATE
- SLUICE GATE

- GATE VALVE, BURIED WITH VALVE BOX
- MUD VALVE
- BUTTERFLY VALVE, BURIED WITH VALVE BOX
- ECCENTRIC PLUG VALVE, BURIED WITH VALVE BOX
- LUBRICATED PLUG VALVE, BURIED WITH VALVE BOX
- GATE VALVE
- BUTTERFLY VALVE
- ECCENTRIC PLUG VALVE
- LUBRICATED PLUG VALVE
- GLOBE VALVE
- BALL VALVE
- DIAPHRAGM VALVE
- CHECK VALVE
- PRESSURE REGULATING VALVE
- BACK–PRESSURE VALVE
- M / P — MOTOR OPERATOR FOR VALVES (M = ELECTRIC, P = PNEUMATIC, H = HYDRAULIC)
- T — TEMPERATURE CONTROL VALVE
- S — SOLENOID VALVE
- MULTIPORT VALVE – 3 WAY
- MULTIPORT VALVE – 4 WAY
- FLOAT OPERATED VALVE
- NEEDLE VALVE
- PRESSURE RELIEF VALVE
- ANGLE VALVE
- HOSE BIBB (H/B)
- HOSE RACK (PLAN VIEW)
- B — BUBBLER LEVEL CONTROL
- CENTRIFUGAL OR TURBINE PUMP OR FAN
- METERING PUMP
- PROGRESSIVE CAVITY, POSITIVE DISPLACEMENT PUMP
- BLOWER OR COMPRESSOR
- INJECTOR OR EDUCTOR
- F/A — FLAME ARRESTER
- AIR VACUUM AND AIR RELEASE ASSEMBLY
- THERMOMETER
- PIPE ANCHOR

- T — ROOM THERMOSTAT
- G — PRESSURE GAUGE
- PRESSURE GAUGE WITH DIAPHRAGM SEAL
- S — PRESSURE SWITCH
- PRESSURE SWITCH WITH DIAPHRAGM SEAL
- FLANGED FITTING
- WELDED FITTING
- MECHANICAL–TYPE FITTING (GROOVED)
- SCREWED, SOCKET–WELD, BELL AND SPIGOT OR HUBLESS FITTING
- SLEEVE–TYPE COUPLING
- FLANGED ADAPTER COUPLING
- FLANGED ADAPTER – SET SCREW TYPE
- EXPANSION JOINT
- MECHANICAL TYPE COUPLING
- FLEXIBLE COUPLING
- UNION
- QUICK DISCONNECT COUPLER
- CAPPED END OR PLUGGED END
- BLIND FLANGE
- REDUCER OR INCREASER
- CUT PIPE
- STRAINER
- DRAIN
- FLOW TUBE
- M M — MAGNETIC METER
- D M — DENSITY METER
- P M — PROPELLER METER
- ORIFICE PLATE AND FLANGES
- ROTAMETER
- T — CONDENSATE TRAP
- PIPE SUPPORT (IN PLAN ONLY)
- CB — CATCH BASIN
- PULSATION DAMPENER
- AD — AREA DRAIN
- LIQUID SURFACE

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

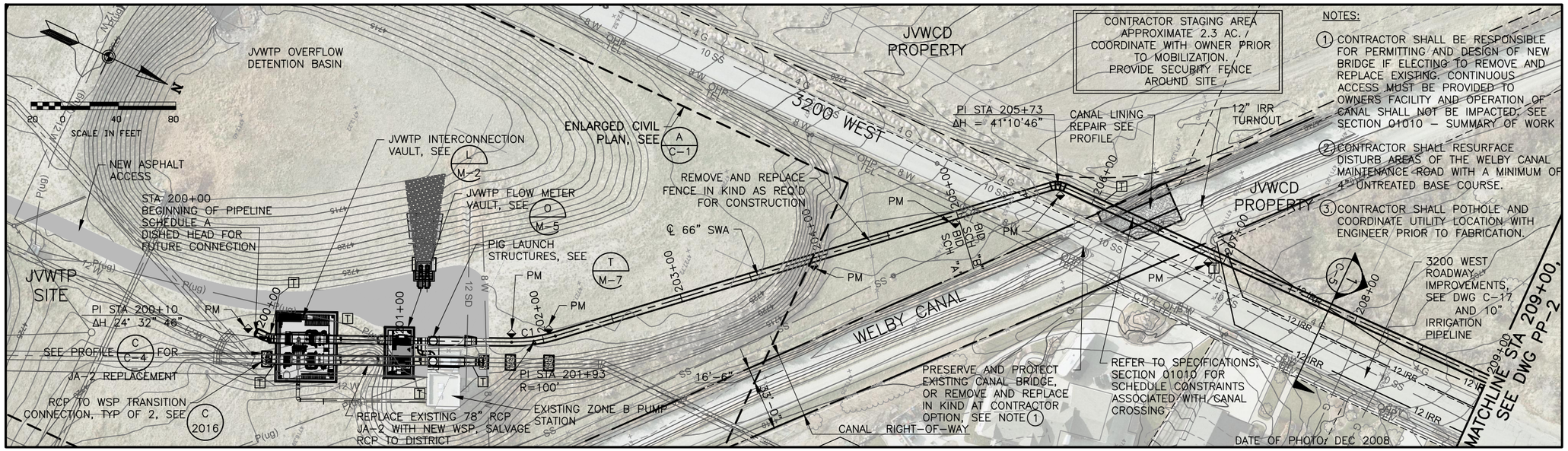
DESIGN T. OLSEN
DRAWN R. DARGER
CHECKED J. COLLINS
APPROVED J. LUETTINGER
REVIEW

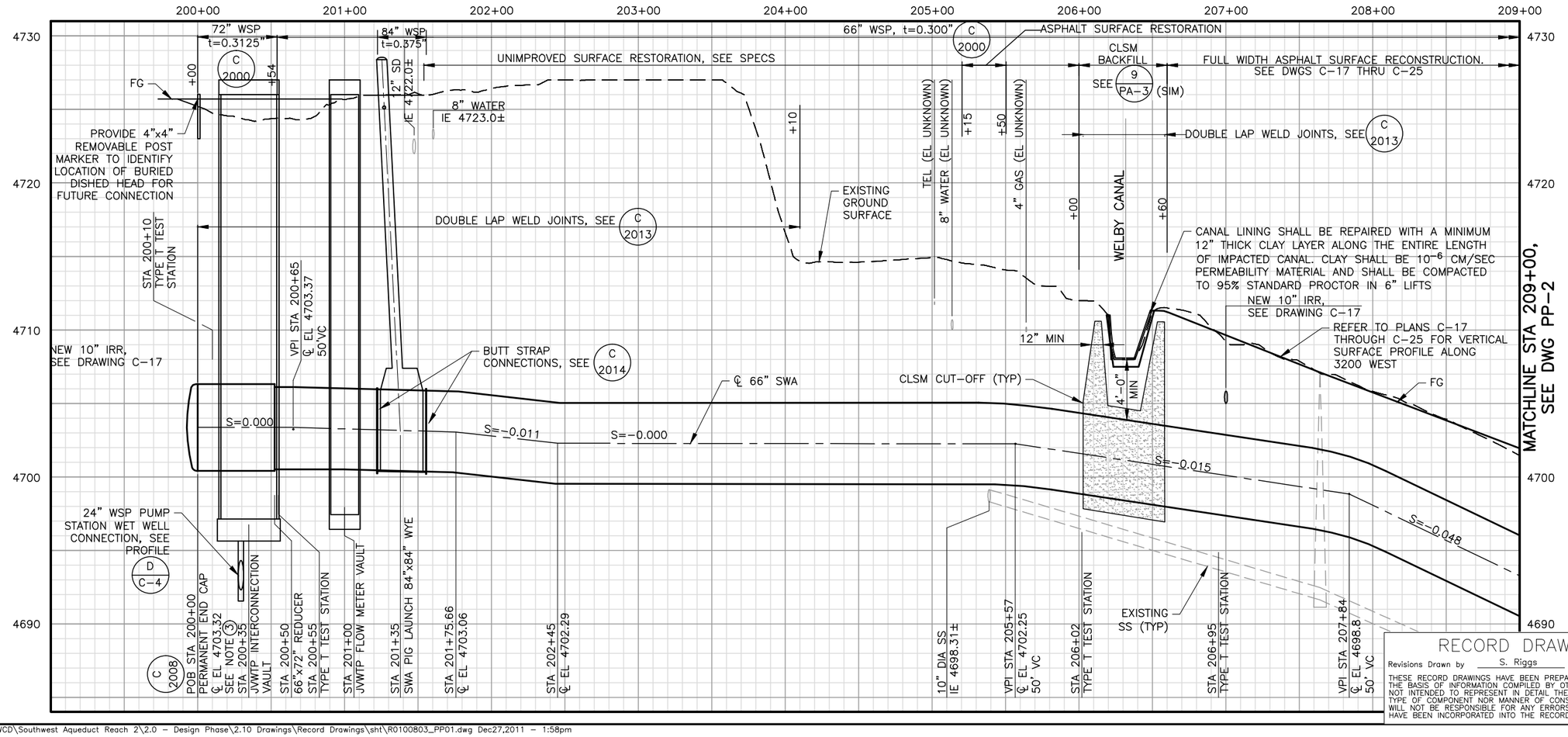
GENERAL
SYMBOLS

PROJECT NUMBER 010-08-03
DATE: FEBRUARY 2010

DRAWING NO. G–7
SHEET 7 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_G07.dwg Nov30,2011 – 2:02pm





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW M. COLLINS
CHECKED
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

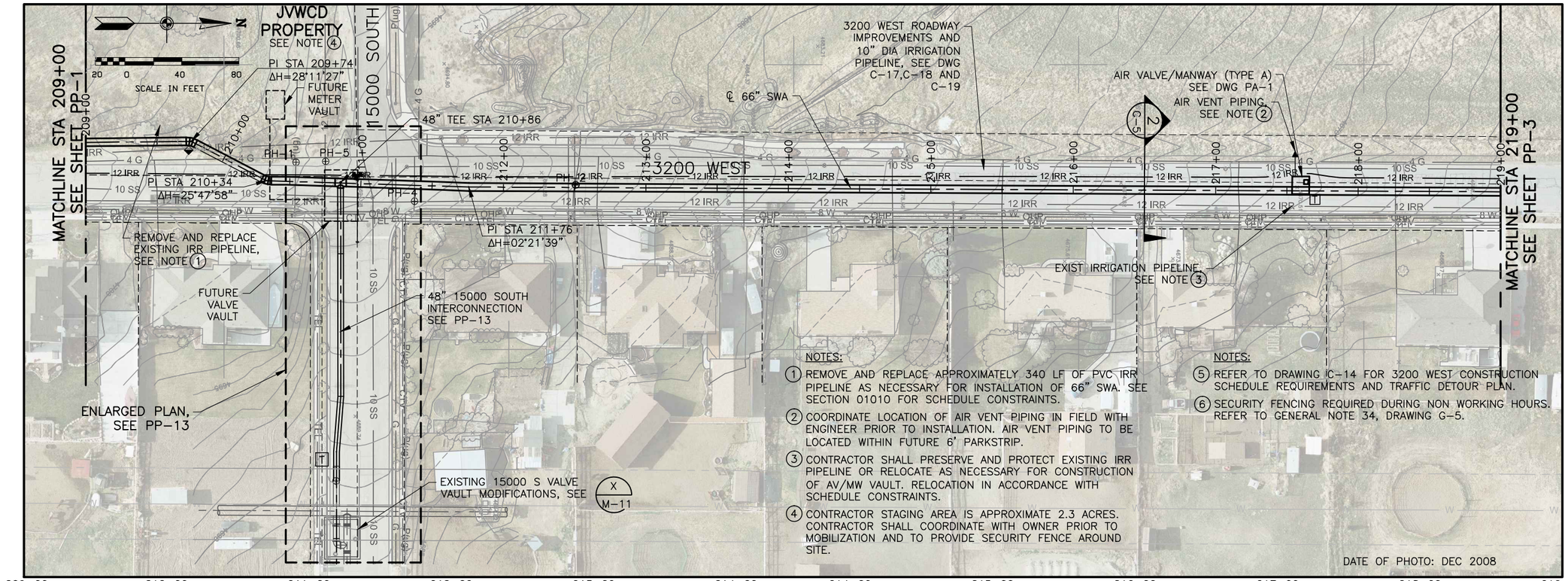
CIVIL

PLAN AND PROFILE – 1
STA 200+00 TO STA 209+00

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-1
SHEET 8 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP01.dwg Dec27,2011 – 1:58pm

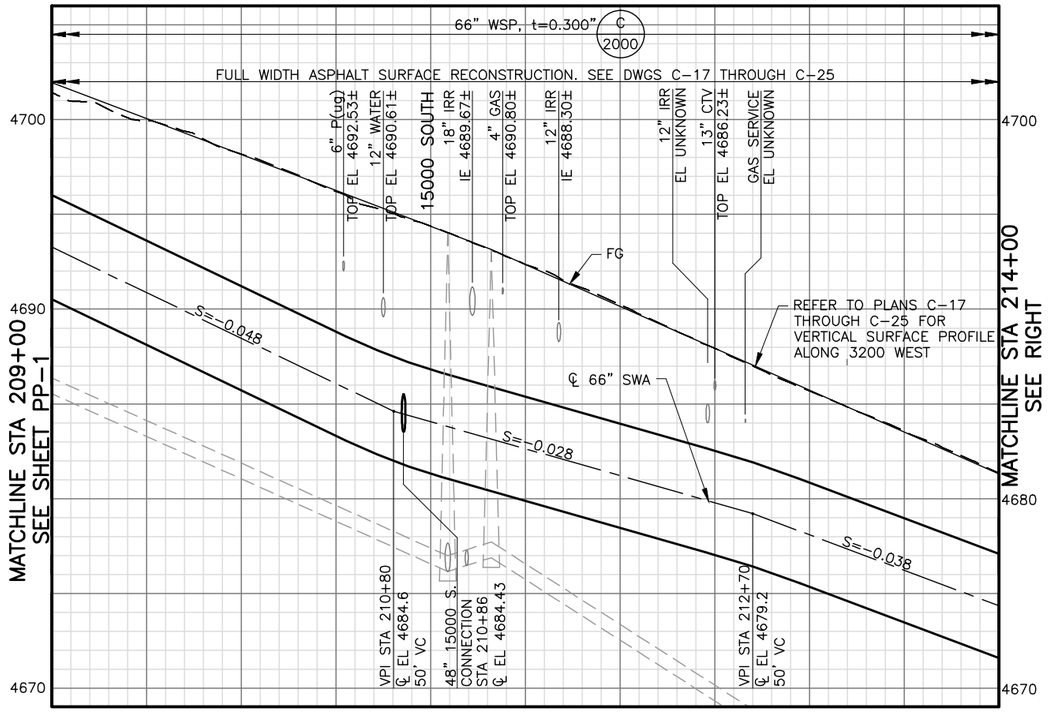


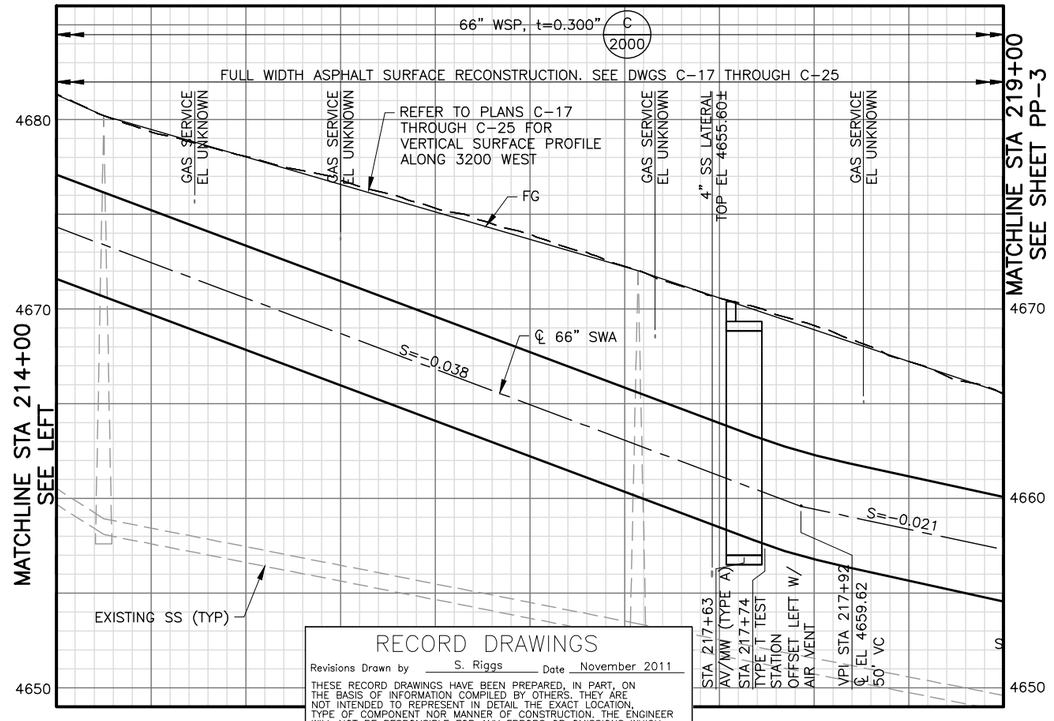
NOTES:

1. REMOVE AND REPLACE APPROXIMATELY 340 LF OF PVC IRR PIPELINE AS NECESSARY FOR INSTALLATION OF 66" SWA. SEE SECTION 01010 FOR SCHEDULE CONSTRAINTS.
2. COORDINATE LOCATION OF AIR VENT PIPING IN FIELD WITH ENGINEER PRIOR TO INSTALLATION. AIR VENT PIPING TO BE LOCATED WITHIN FUTURE 6' PARKSTRIP.
3. CONTRACTOR SHALL PRESERVE AND PROTECT EXISTING IRR PIPELINE OR RELOCATE AS NECESSARY FOR CONSTRUCTION OF AV/MW VAULT. RELOCATION IN ACCORDANCE WITH SCHEDULE CONSTRAINTS.
4. CONTRACTOR STAGING AREA IS APPROXIMATE 2.3 ACRES. CONTRACTOR SHALL COORDINATE WITH OWNER PRIOR TO MOBILIZATION AND TO PROVIDE SECURITY FENCE AROUND SITE.

NOTES:

5. REFER TO DRAWING C-14 FOR 3200 WEST CONSTRUCTION SCHEDULE REQUIREMENTS AND TRAFFIC DETOUR PLAN.
6. SECURITY FENCING REQUIRED DURING NON WORKING HOURS. REFER TO GENERAL NOTE 34, DRAWING G-5.





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DESIGN R. DARGER
DRAWN
REVIEW M. COLLINS
CHECKED
APPROVED J. LUETTINGER

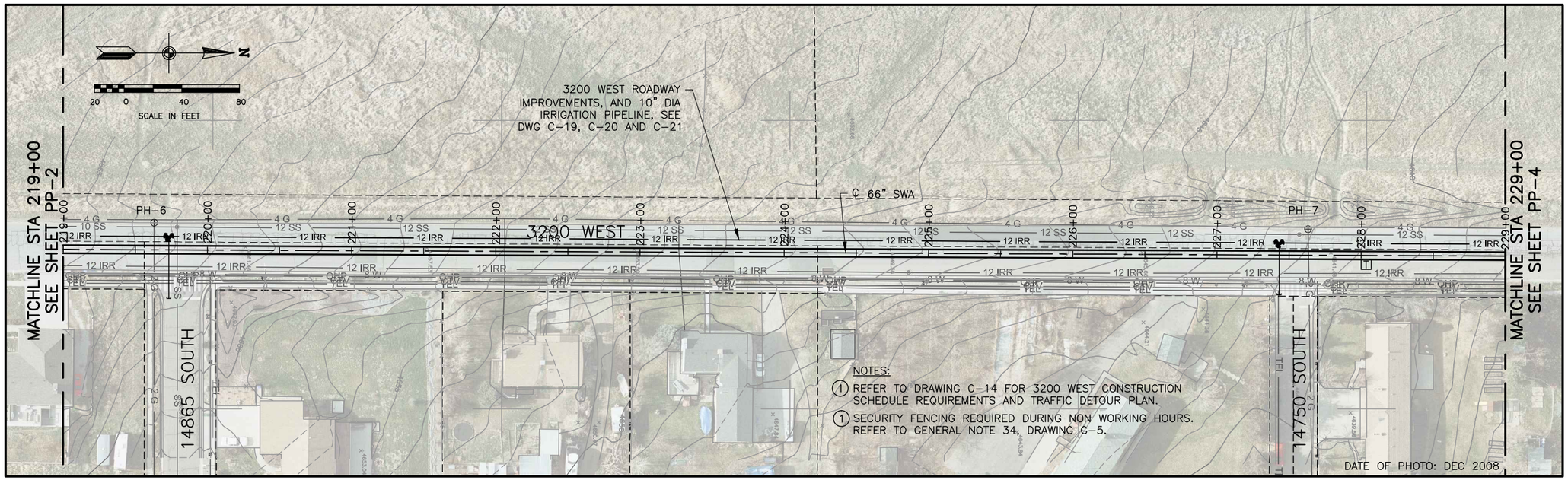
CIVIL

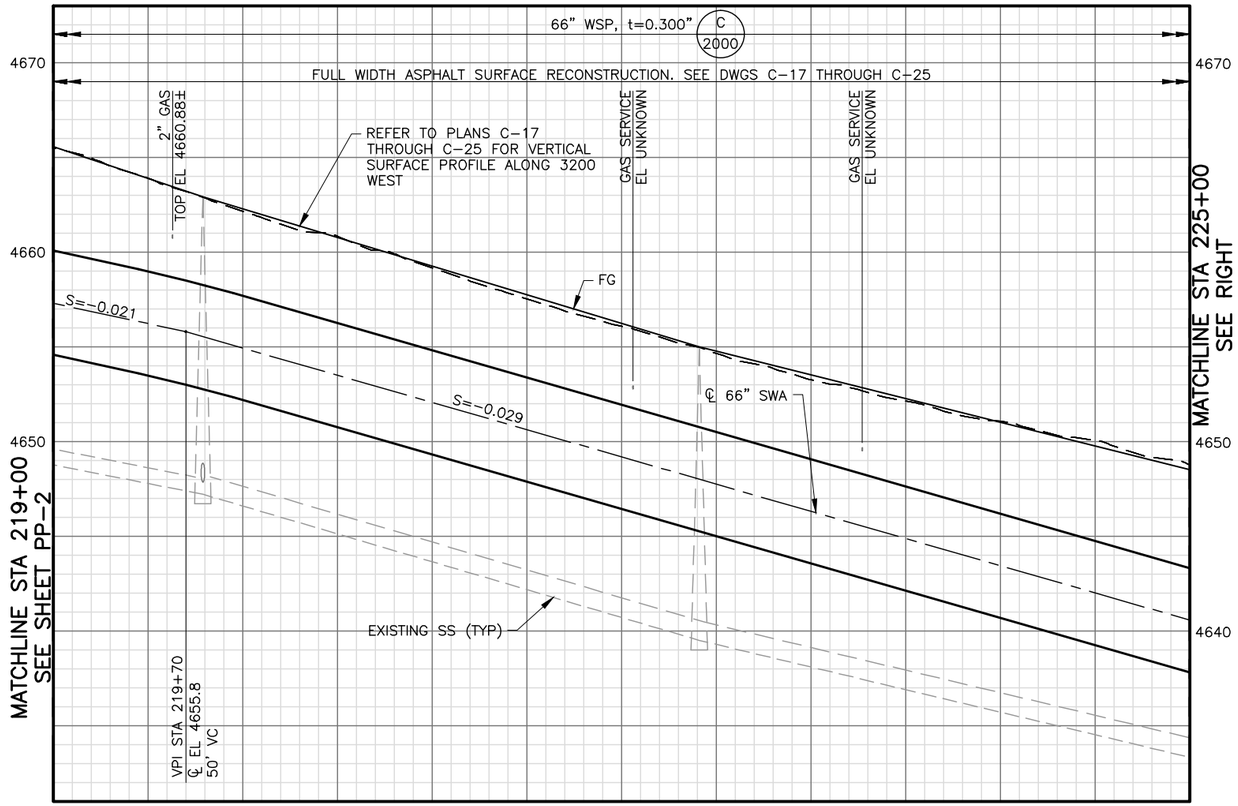
PLAN AND PROFILE -2
STA 209+00 TO STA 219+00

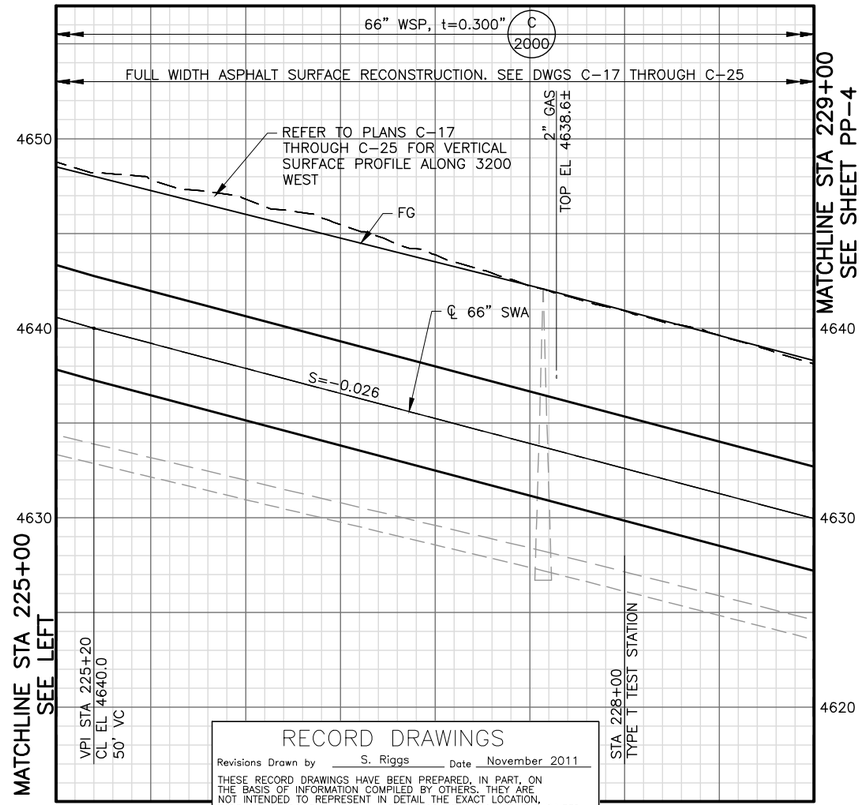
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-2
SHEET 9 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP02.dwg Nov30,2011 - 3:56pm







RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DESIGN
DRAWN R. DARGER DRAWN
REVIEW CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

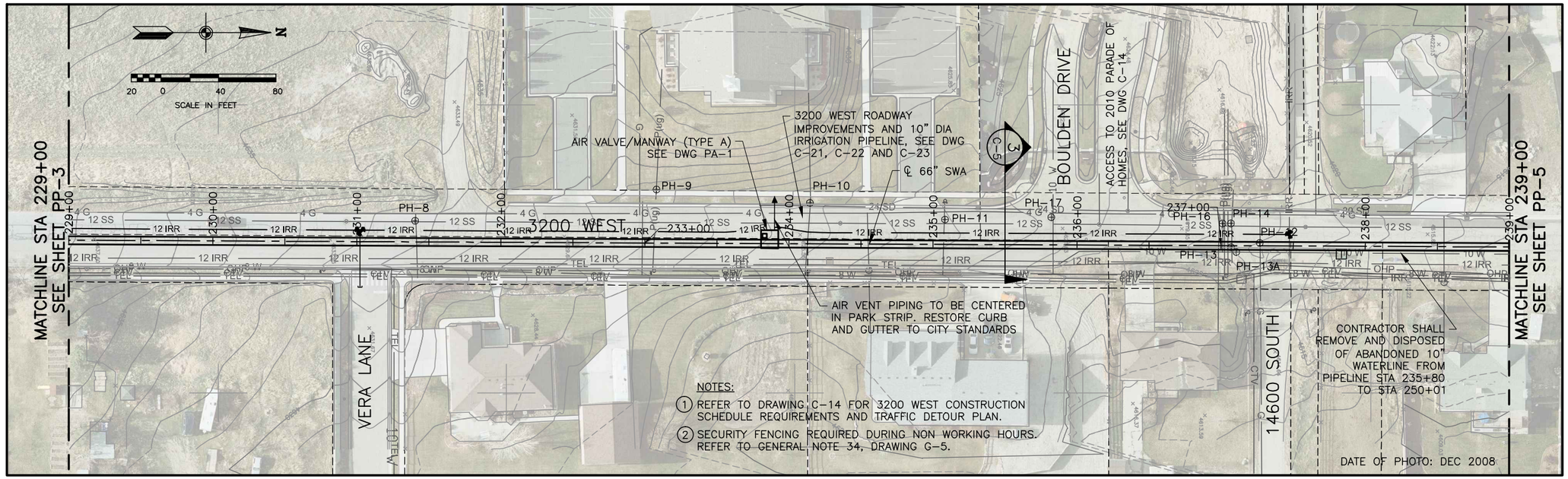
PLAN AND PROFILE – 3
STA 219+00 TO STA 229+00

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. PP-3

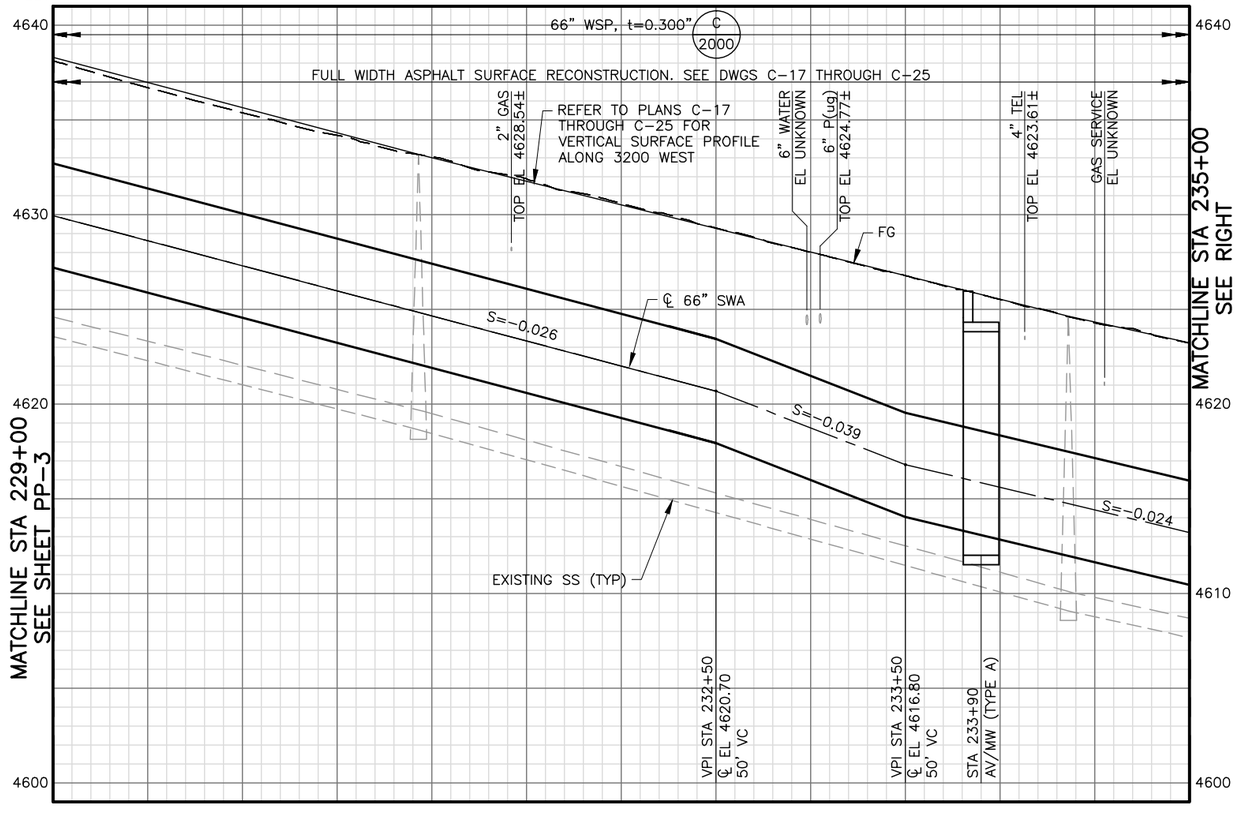
SHEET 10 OF 110

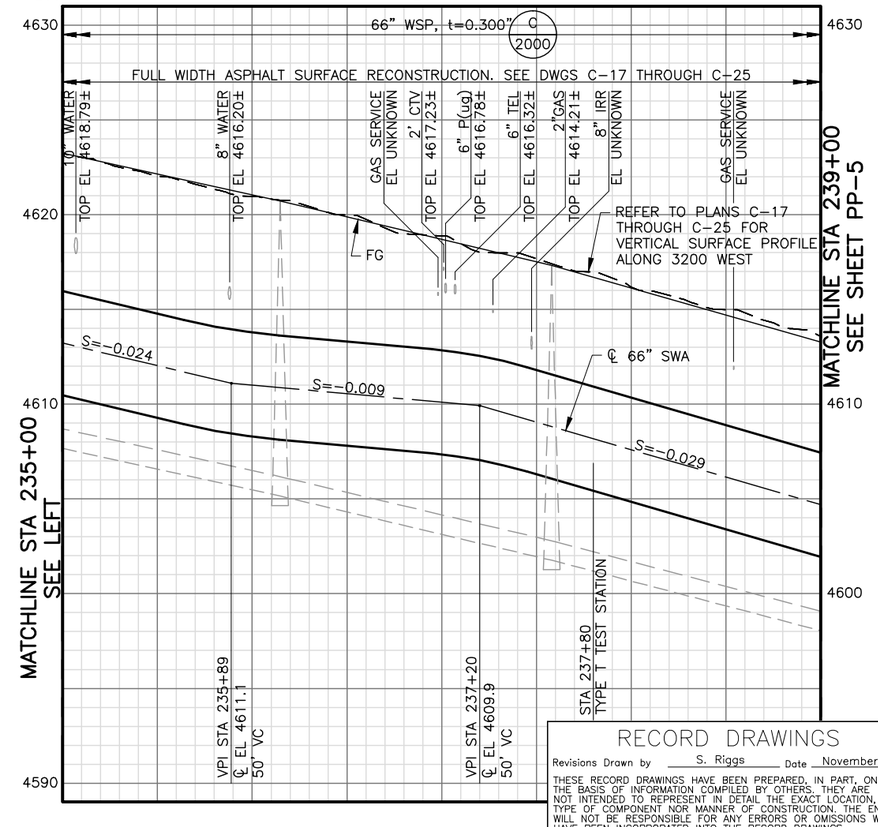
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP03.dwg Nov14,2011 – 11:58am



NOTES:

1. REFER TO DRAWING C-14 FOR 3200 WEST CONSTRUCTION SCHEDULE REQUIREMENTS AND TRAFFIC DETOUR PLAN.
2. SECURITY FENCING REQUIRED DURING NON WORKING HOURS. REFER TO GENERAL NOTE 34, DRAWING G-5.





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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

PROJECT
SOUTHWEST AQUEDUCT REACH 2 PROJ

DESIGN T. OLSEN
DRAWN R. DARGER
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

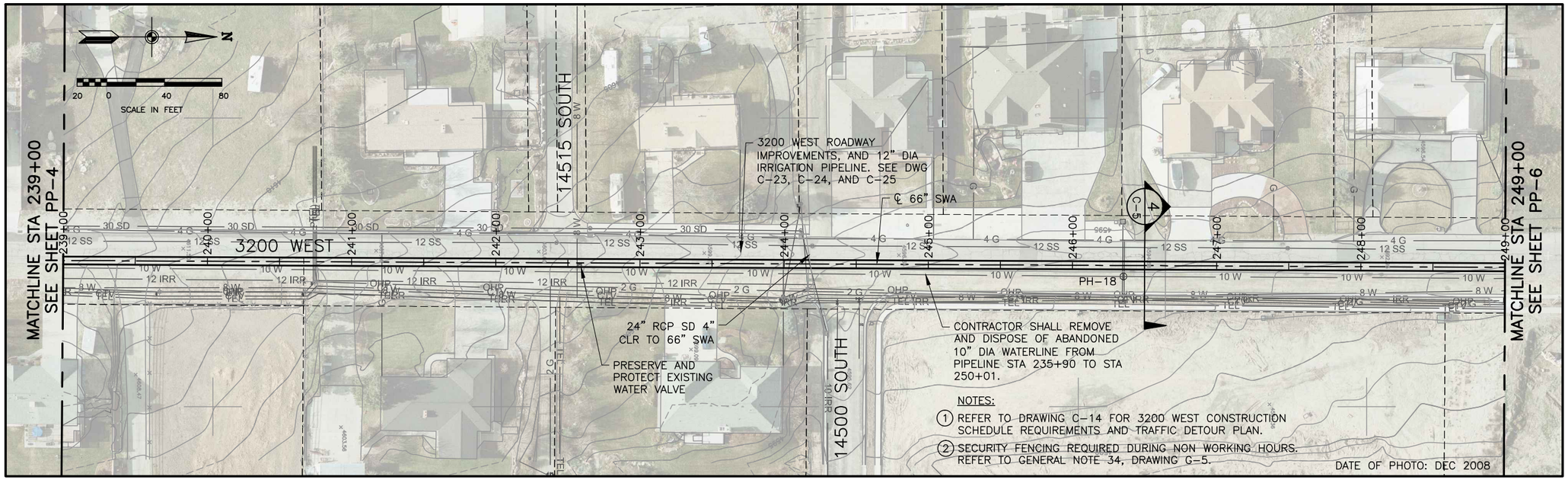
PLAN AND PROFILE – 4
STA 229+00 TO STA 239+00

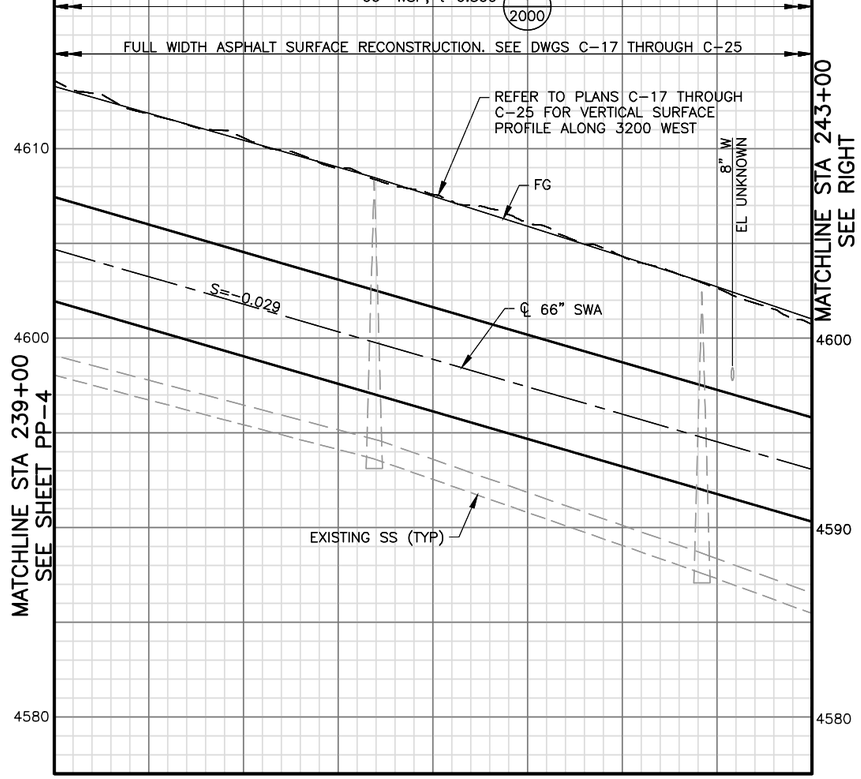
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

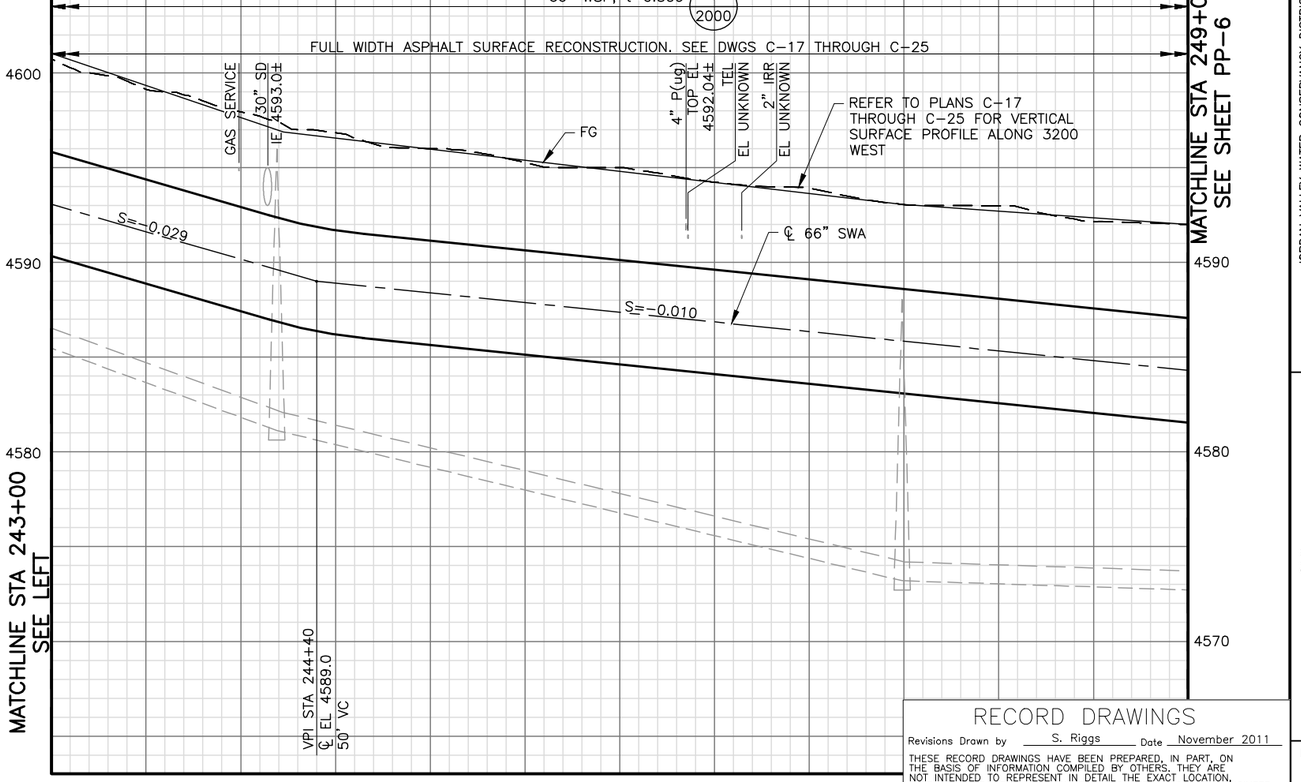
DRAWING NO. PP-4

SHEET 11 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP04.dwg Nov14,2011 – 12:02pm







RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN R.D./R.G.
CHECKED M. COLLINS
APPROVED J. LUETTINGER
REVIEW

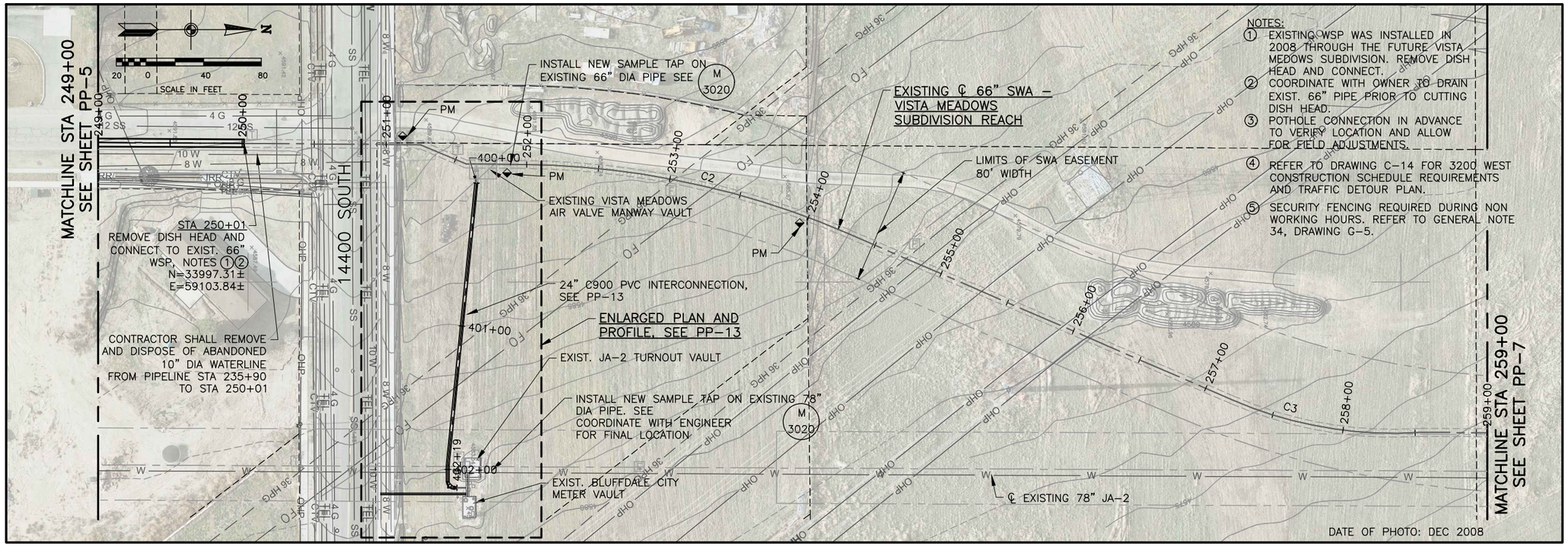
CIVIL

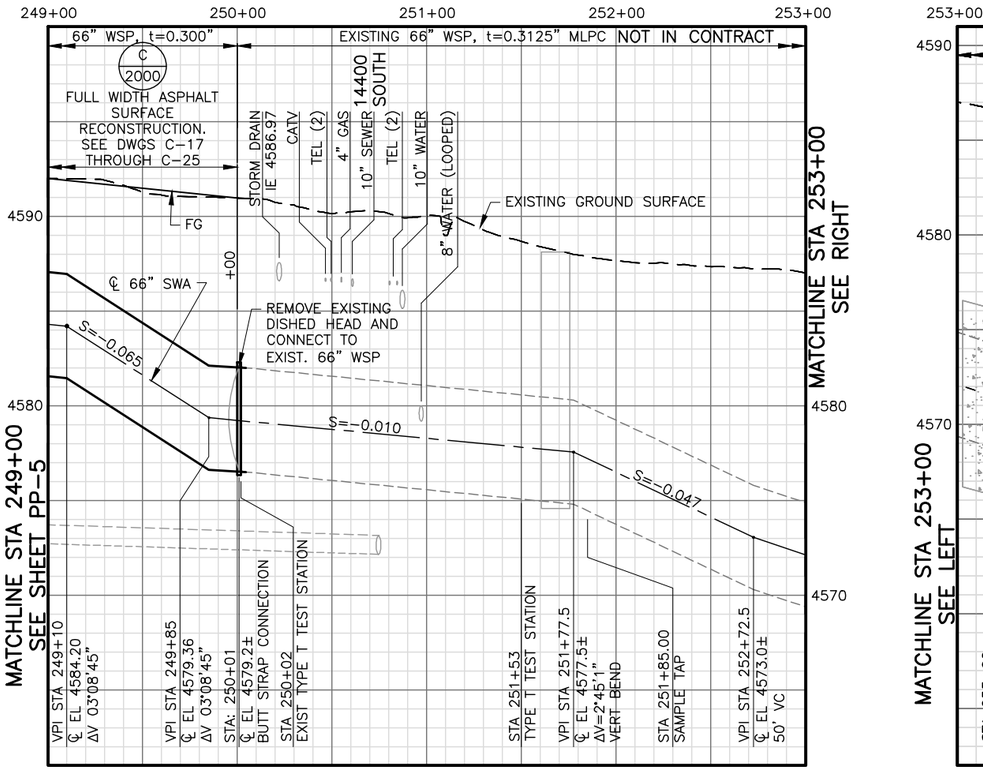
PLAN AND PROFILE – 5
STA 239+00 TO STA 249+00

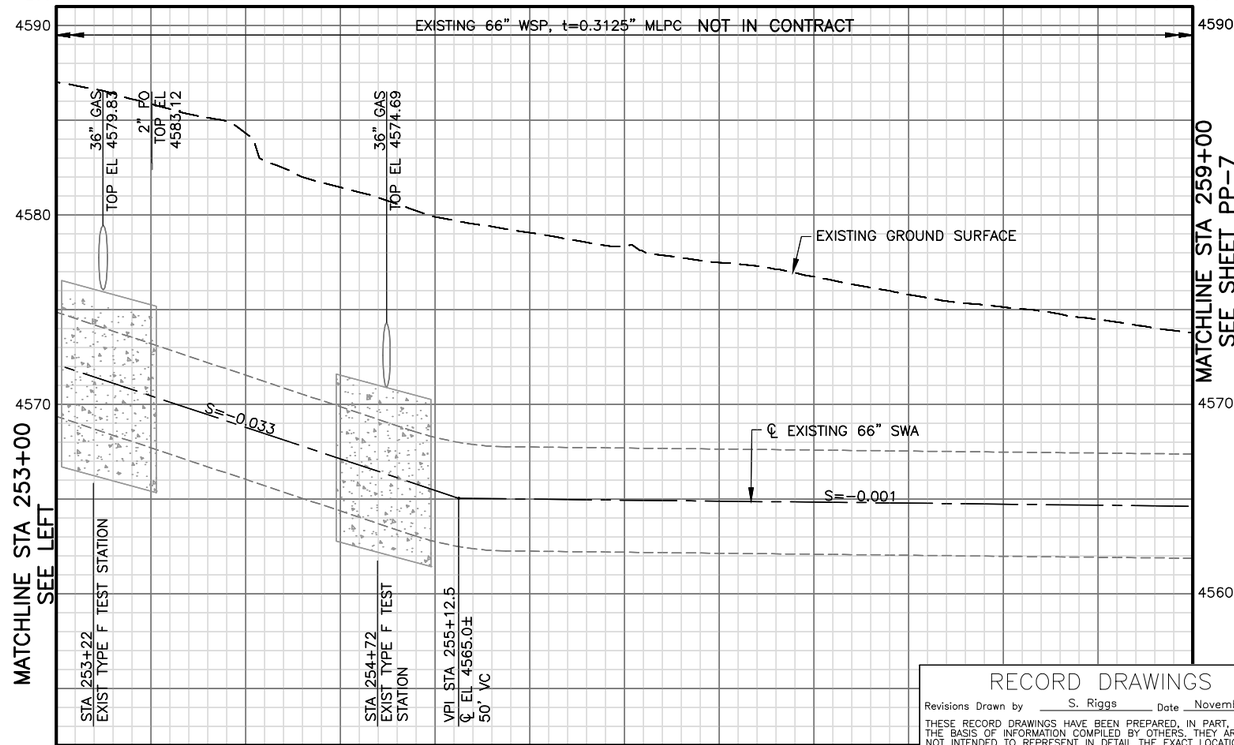
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-5
SHEET 12 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP05.dwg Nov30,2011 – 4:15pm







RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DRAWN D.R./R.G.
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

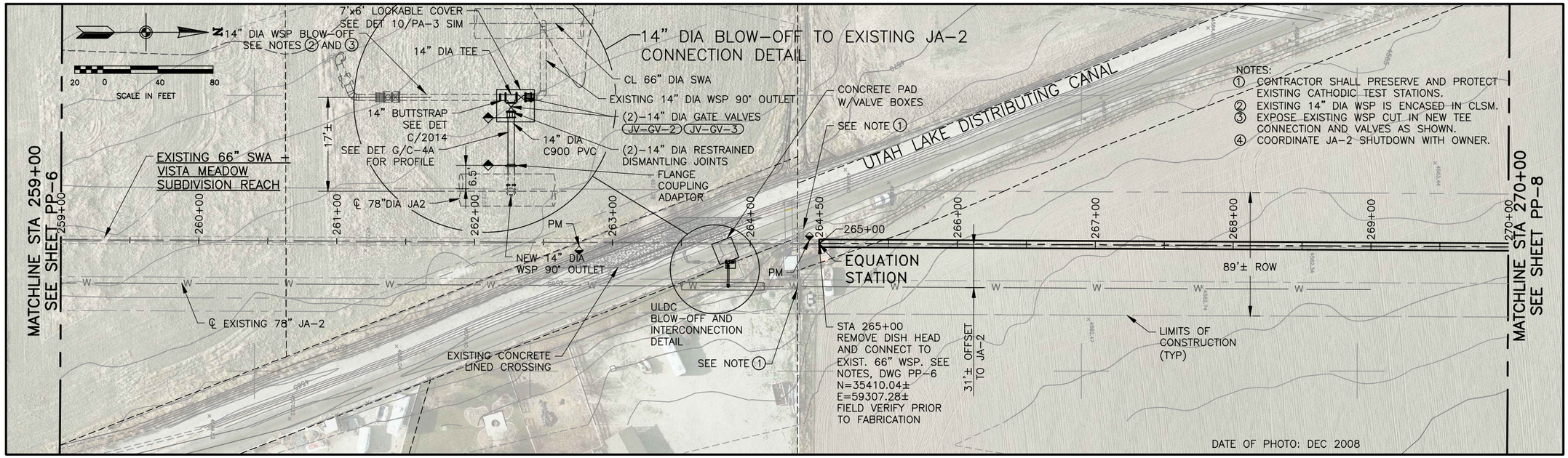
CIVIL

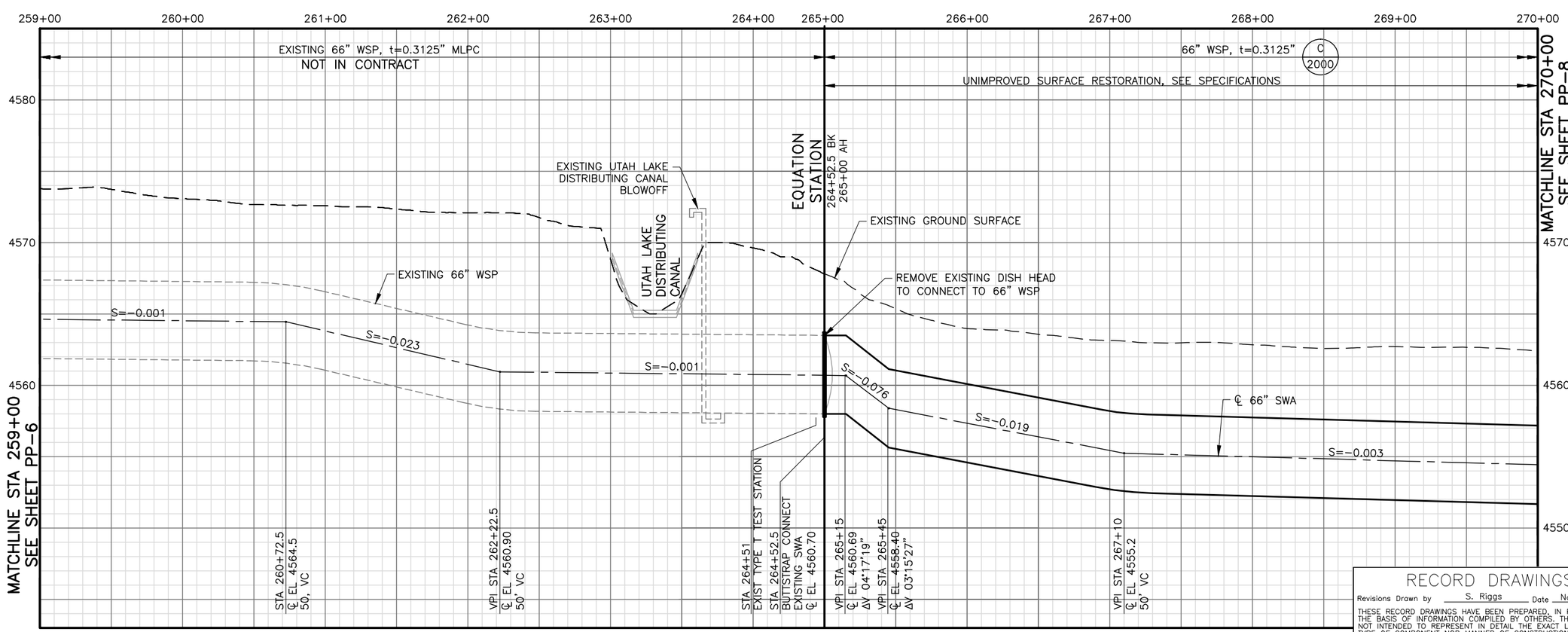
PLAN AND PROFILE – 6
STA 249+00 TO STA 259+00

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-6
SHEET 13 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP06.dwg Nov30,2011 – 4:29pm





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

PROJECT
SOUTHWEST AQUEDUCT REACH 2 PROJ

DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

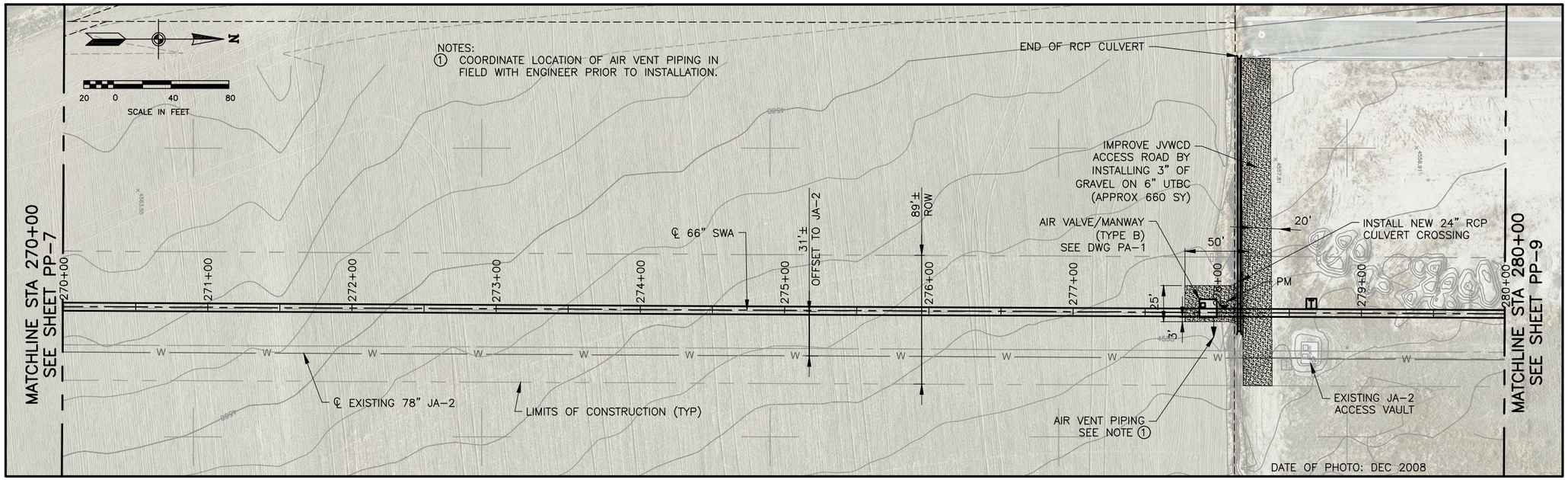
CIVIL

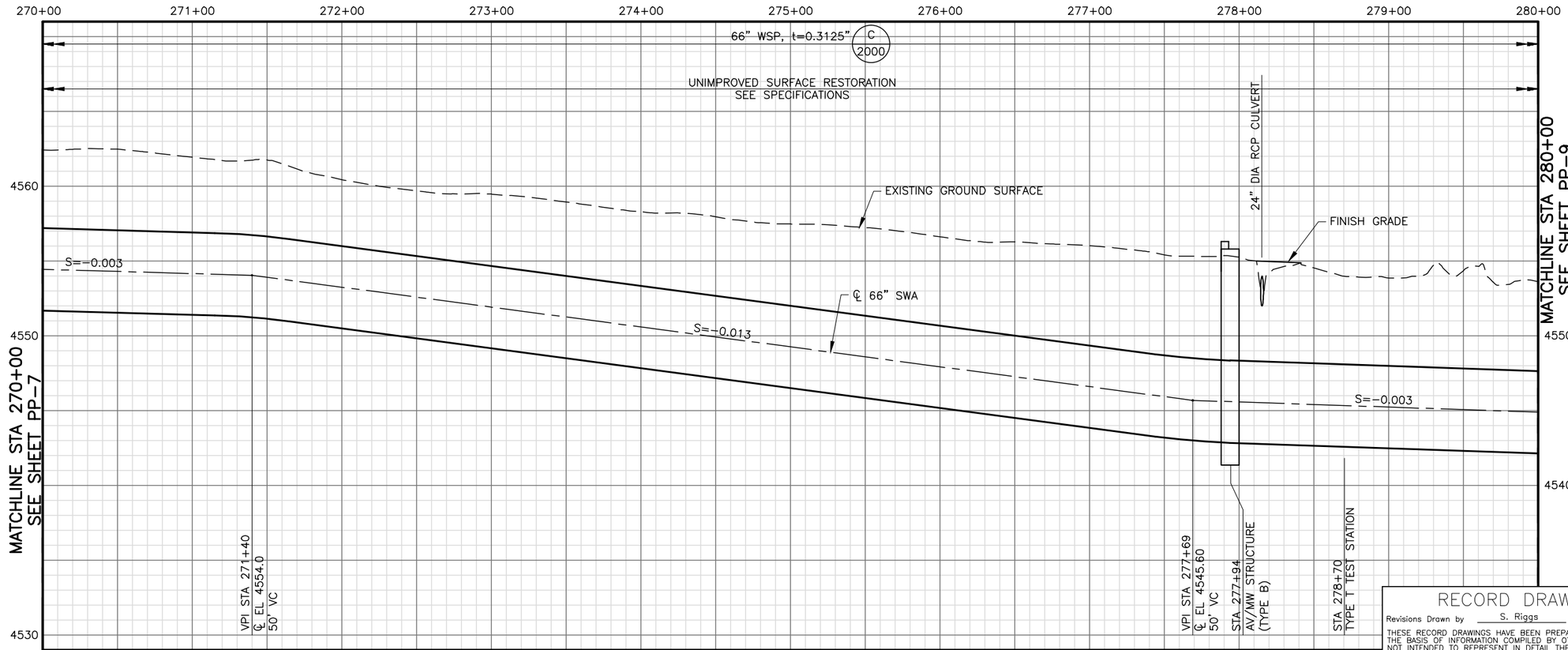
PLAN AND PROFILE – 7
STA 259+00 TO STA 270+00

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-7
SHEET 14 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP07.dwg Nov30,2011 – 4:41pm





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

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			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

PROJECT
SOUTHWEST AQUEDUCT REACH 2 PROJ

DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

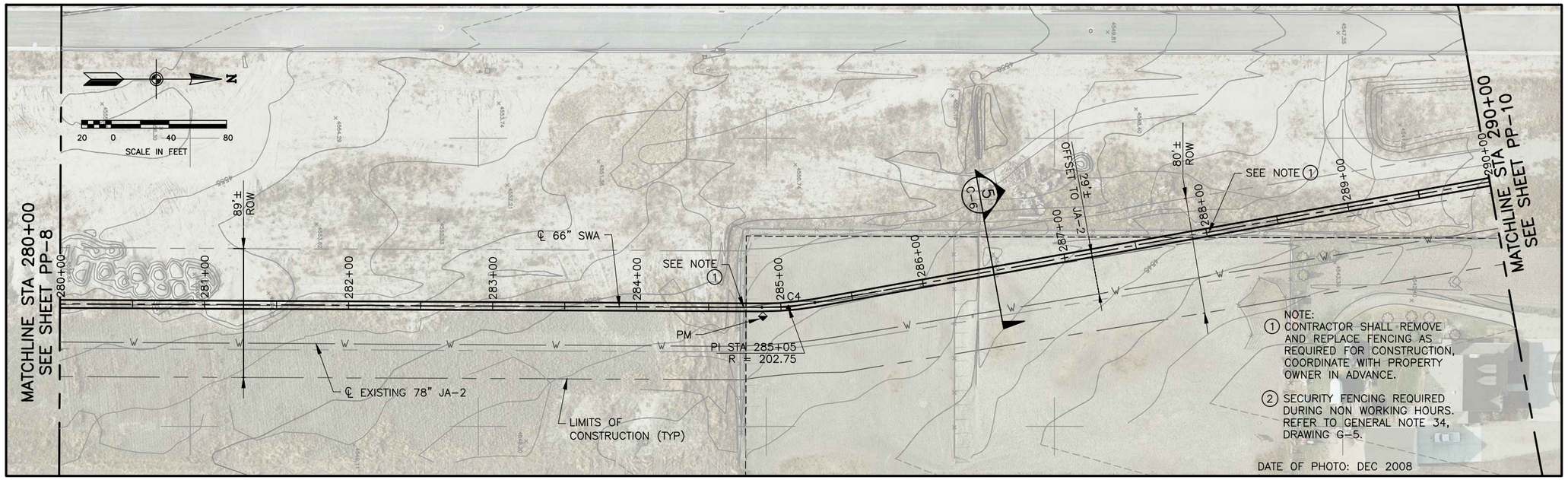
PLAN AND PROFILE – 8
STA 270+00 TO STA 280+00

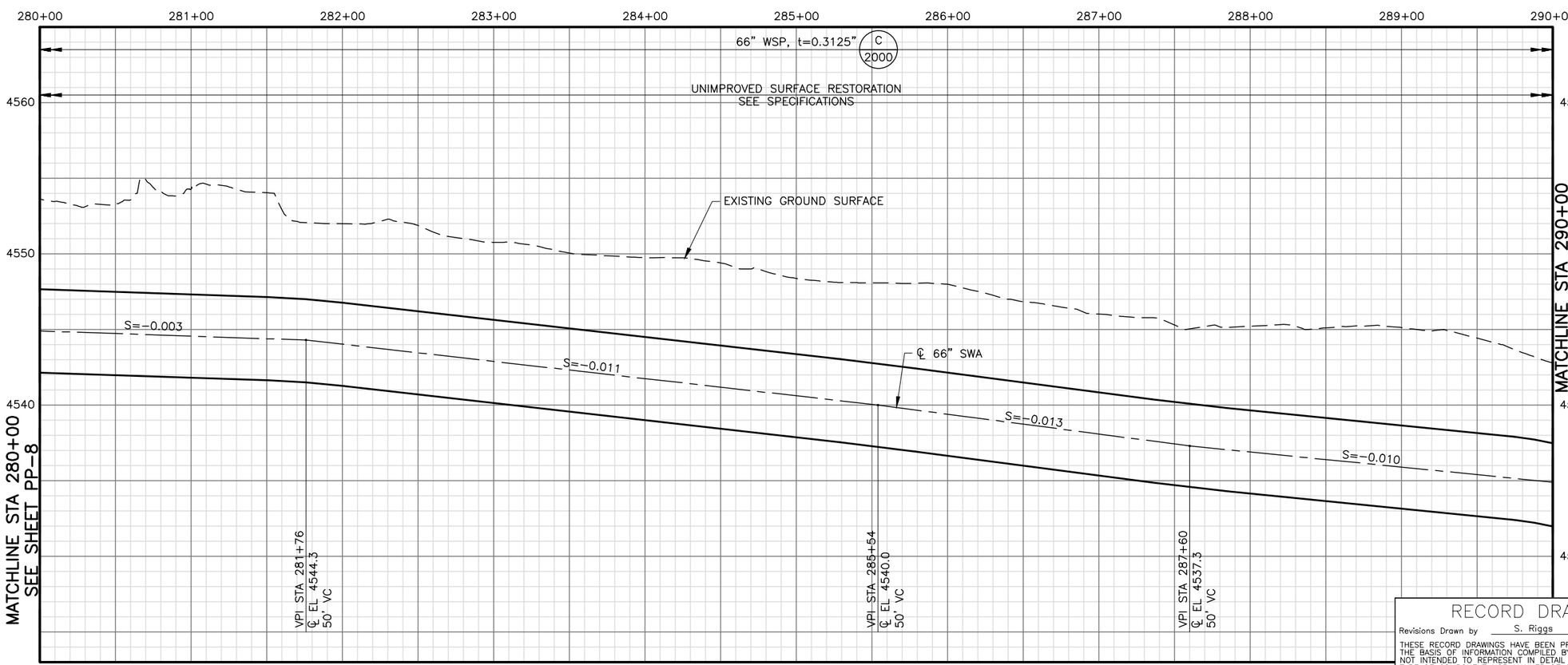
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-8

SHEET 15 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP08.dwg Nov30,2011 – 4:49pm





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

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			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

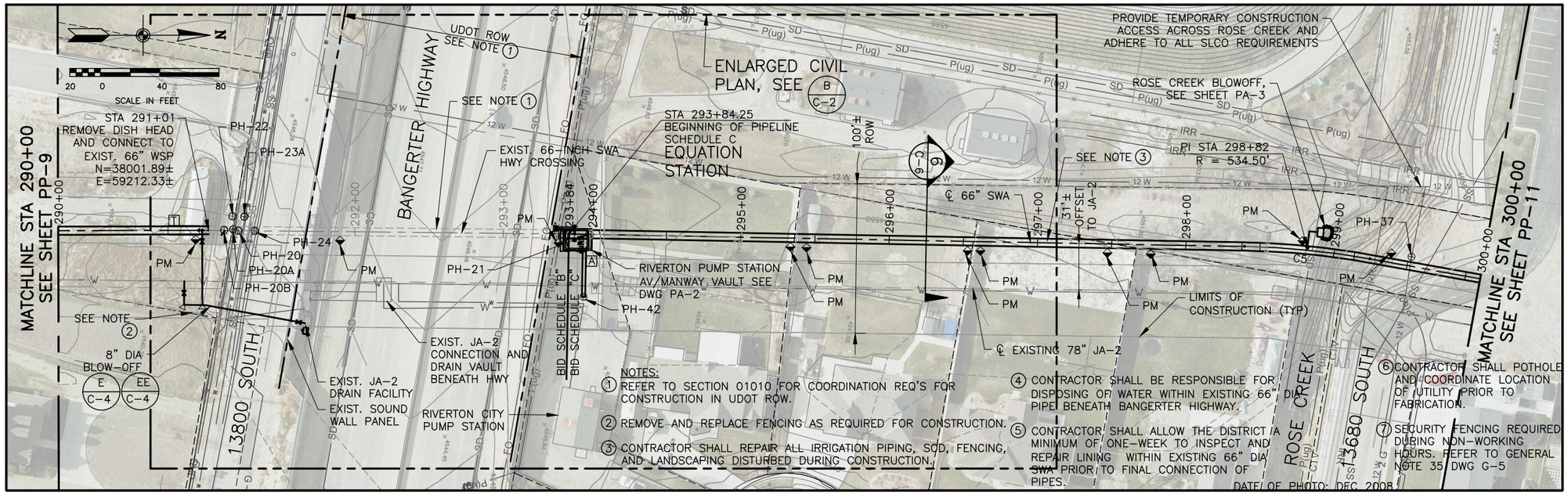
CIVIL

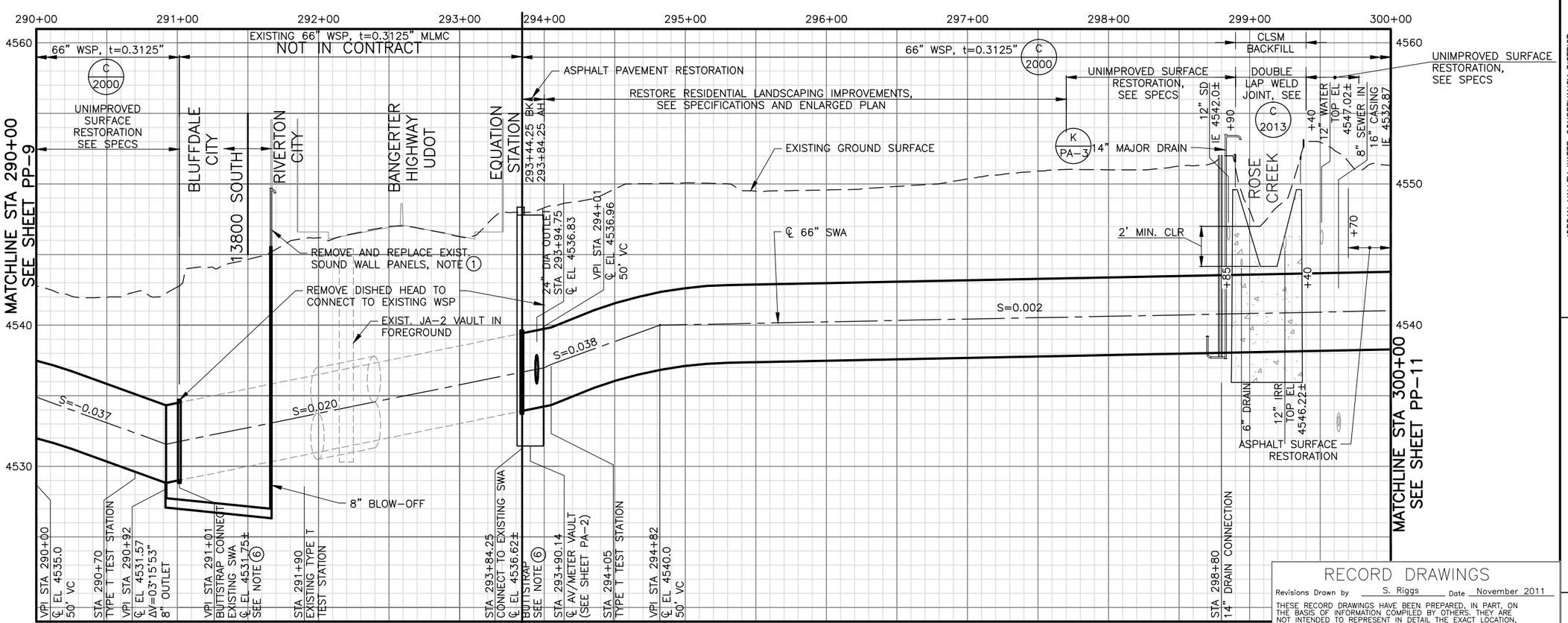
PLAN AND PROFILE – 9
STA 280+00 TO STA 290+00

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-9
SHEET 16 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP09.dwg Dec27,2011 – 2:03pm





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

PROJECT
SOUTHWEST AQUEDUCT REACH 2 PROJ

DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

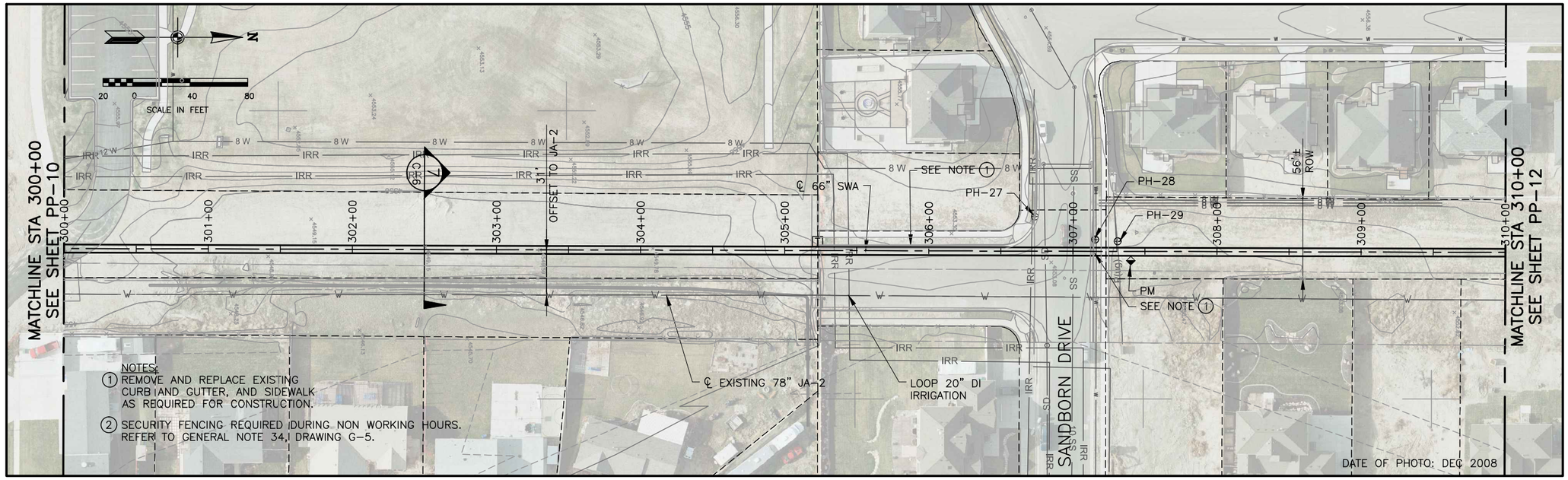
PLAN AND PROFILE – 10
STA 290+00 TO STA 300+00

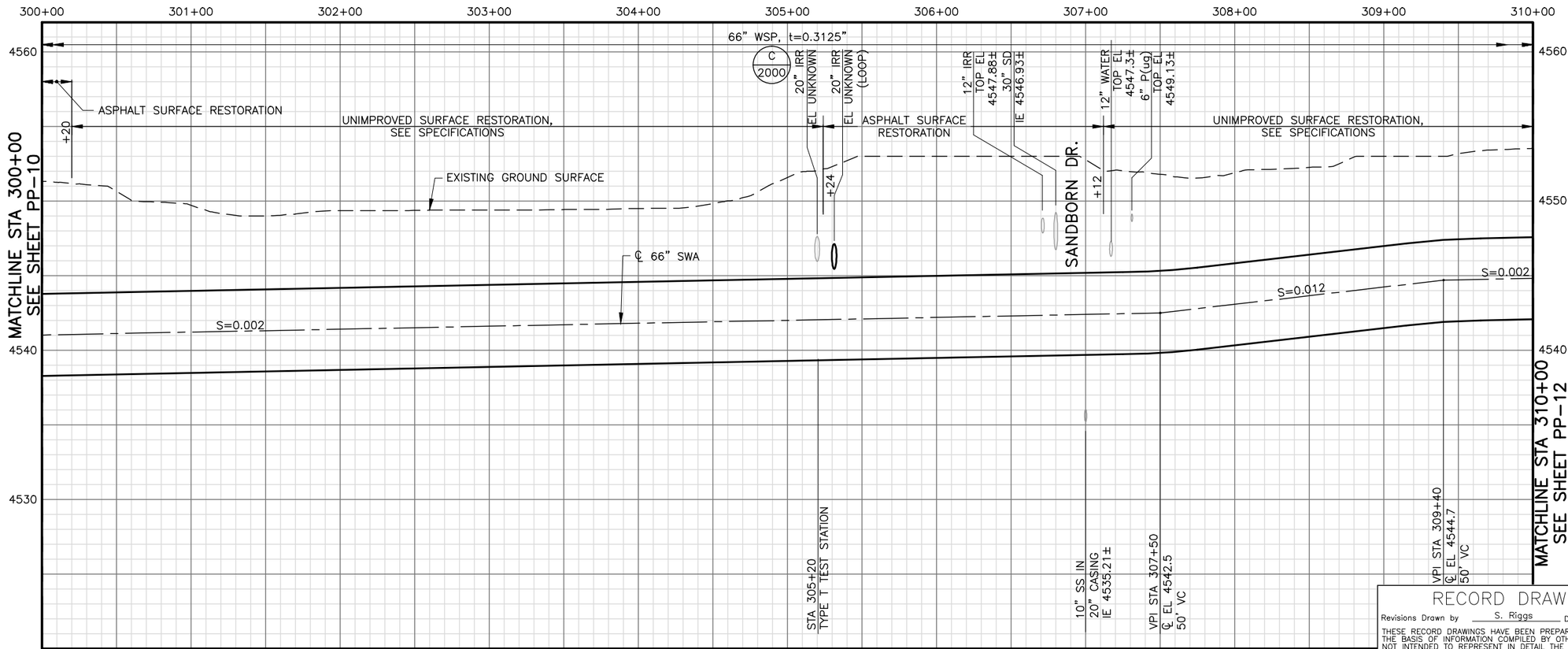
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-10

SHEET 17 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP10.dwg Dec01,2011 – 8:36am





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DESIGN
DRAWN R.D./R.G. DRAWN
REVIEW M. COLLINS CHECKED
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

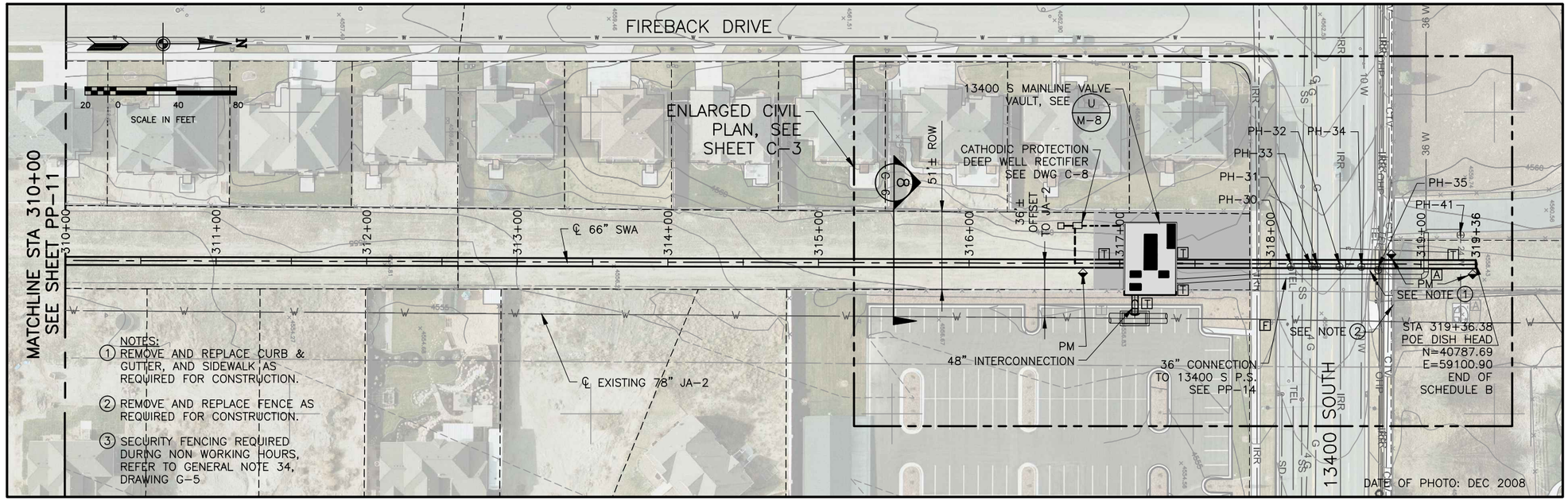
PLAN AND PROFILE – 11
STA 300+00 TO STA 310+00

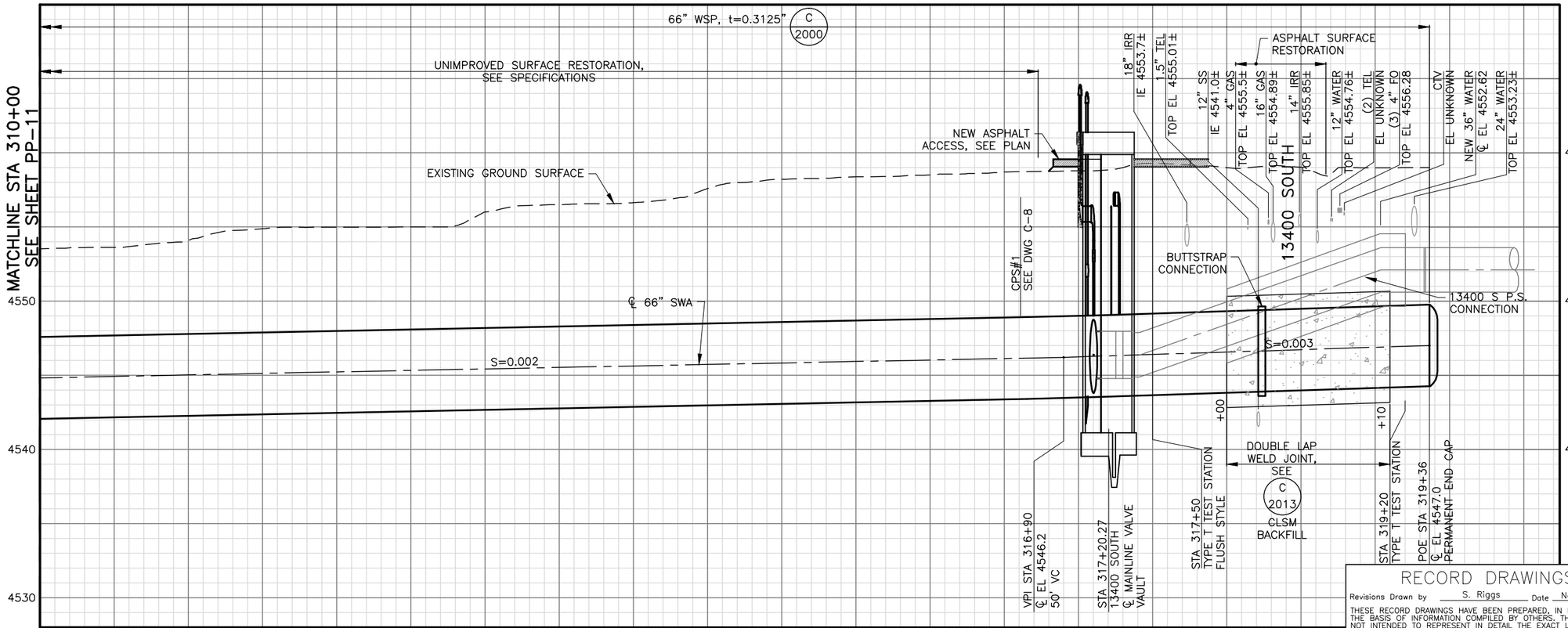
DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. PP-11

SHEET 18 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP11.dwg Dec01,2011 – 9:43am





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

PROJECT
SOUTHWEST AQUEDUCT REACH 2 PROJ

DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

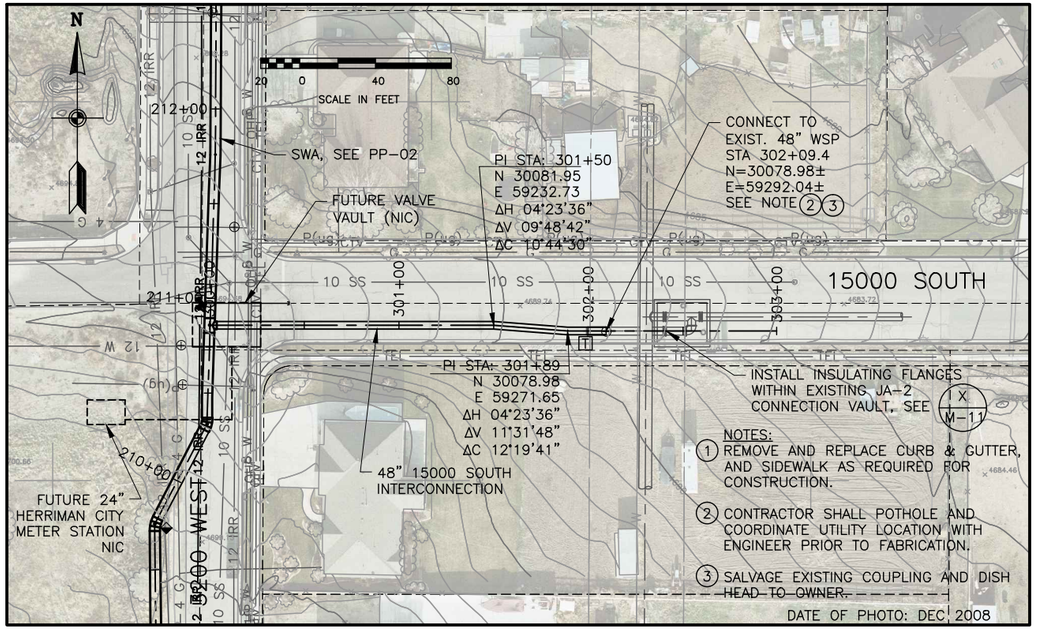
CIVIL

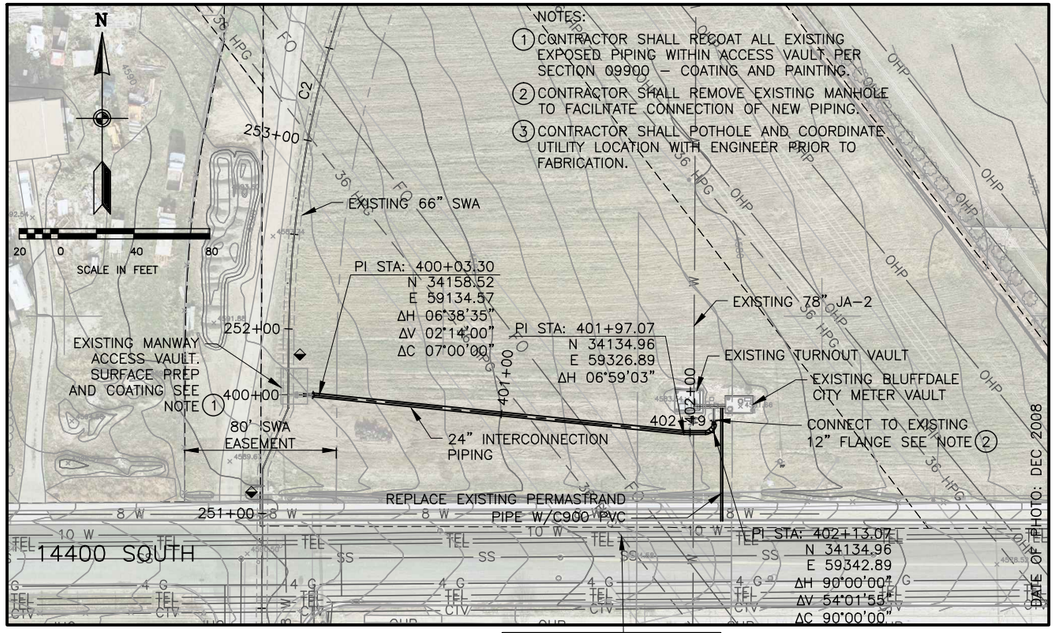
PLAN AND PROFILE – 12
STA 310+00 TO STA 319+36.4

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

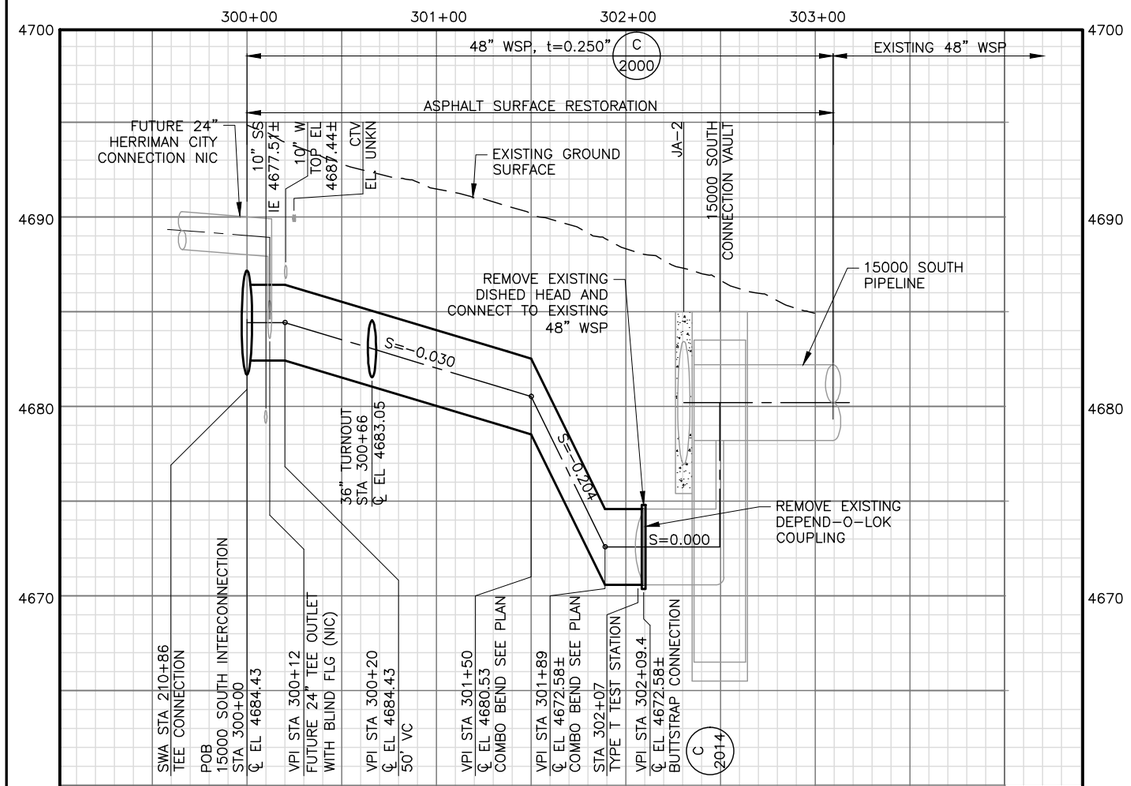
DRAWING NO. PP-12
SHEET 19 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP12.dwg Dec27,2011 – 2:14pm

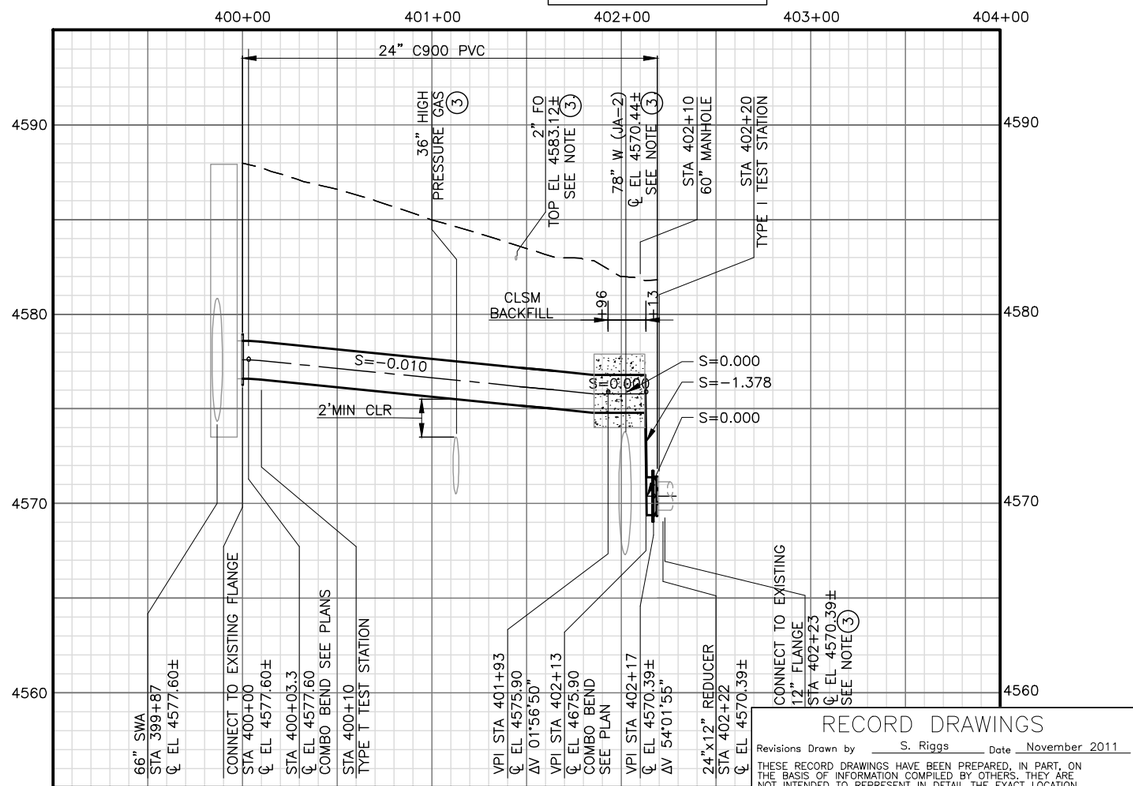




WARNING
HIGH PRESSURE GAS LINE
USE EXTREME CAUTION



15000 SOUTH INTERCONNECTION



14400 SOUTH INTERCONNECTION

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

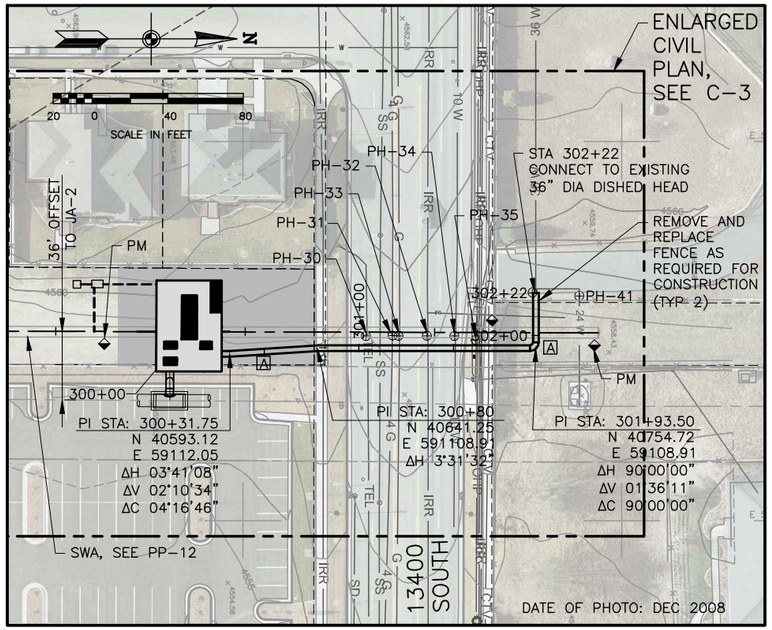
DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW M. COLLINS
CHECKED
APPROVED J. LUETTINGER

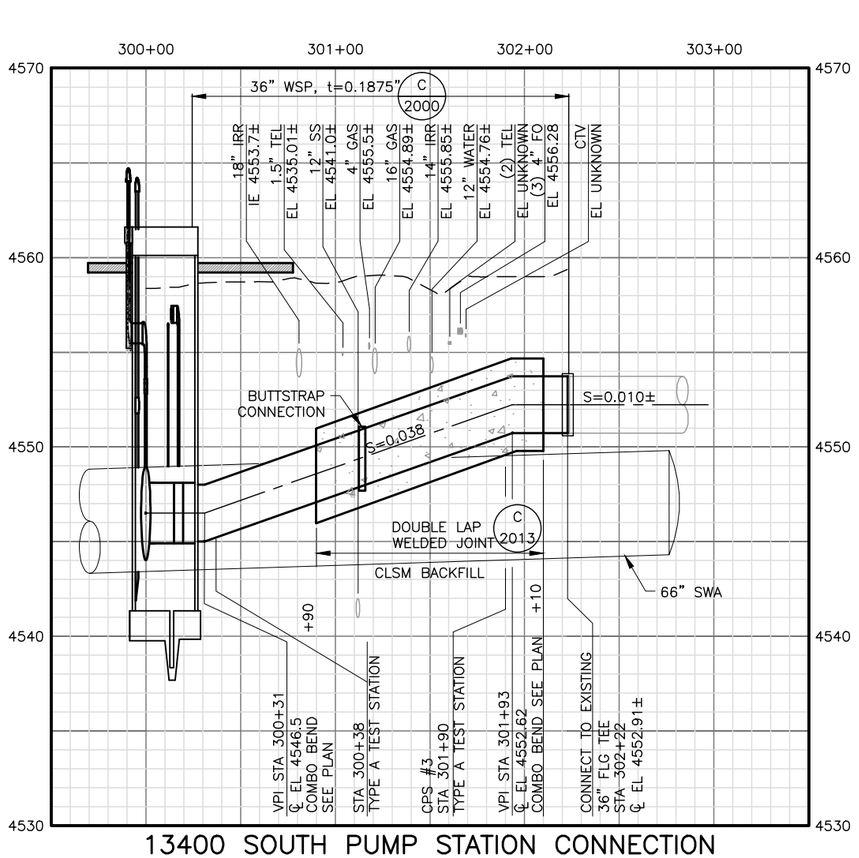
CIVIL
15000 SOUTH, AND 14400 SOUTH INTERCONNECTION
PLAN AND PROFILE
STA 300+00 TO STA 302+09.4
STA 400+00 TO STA 402+23

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-13
SHEET 20 OF 110

P:\Jordan Valley [redacted]outhwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP13.dwg Dec01,2011 – 10:38am





13400 SOUTH PUMP STATION CONNECTION

SOUTHWEST AQUEDUCT POTHOLE SCHEDULE

Test Hole Number	Location	Type of Utility	Utility Size	Material of Utility	Utility Owner	Field Depth	Elevation (Top of Utility)	Surface Type Ground / Paving / Concrete	Surface Thickness	Depth of Water	General Soil Type	Comments
1	15000 South / 3200 West	Buried Electric	6"	PVC	Rocky Mountain Power	3.68	4692.531	Natural Ground	NA	NA	Sandy	
2	14967 South / 3200 West	Cable TV	3"	PVC	Comcast	1.81	4686.226	Asphalt	5"	NA	Rocky	
4	15000 South / 3200 West	Gas	4"	PE	Questar Gas Company	1.84	4690.796	Asphalt	5"	NA	Sandy	
5	15000 South / 3200 West	Water	12"	PVC	Bluffdale City	5.02	4690.611	Natural Ground	NA	NA	Sandy	
6	14865 South / 3200 West	Gas	2"	PE	Questar Gas Company	2.64	4660.881	Natural Ground	NA	NA	Sandy	
7	14750 South / 3200 West	Gas	2"	PE	Questar Gas Company	3.76	4638.602	Asphalt	2"	NA	Rocky, sandy	
8	14700 South / 3200 West	Gas	2"	PE	Questar Gas Company	3.92	4628.537	Asphalt	3"	NA	Sandy, rocky	
9	14640 South / 3200 West	Buried Electric	6"	PVC	Rocky Mountain Power	3.74	4624.773	Natural Ground	NA	NA	Sandy	Concrete cap present in park strip - moved test hole west of sidewalk to find conduit
10	14637 South / 3200 West	Buried Telephone	4"	PVC	Qwest Communications	2.04	4623.613	Natural Ground	NA	NA	Sandy	
11	14637 South / 3200 West	Water	10"	PVC	Bluffdale City	4.34	4618.788	Asphalt	4"	NA	Sandy	
12	14600 South / 3200 West	Gas	2"	PE	Questar Gas Company	4.07	4614.213	Asphalt	3"	NA	Sandy	Abandoned water line present at same location at 3.18 feet
13A	14600 South / 3200 West	Unknown	10"	Steel	Unknown	1.85	4616.595	Natural Ground	NA	NA	Rocky	Abandoned
13	14600 South / 3200 West	Buried Telephone	6"	PVC	Qwest Communications	2.57	4616.318	Asphalt	3"	NA	Rocky, sandy	
14	14600 South / 3200 West	Buried Electric	6"	PVC	Rocky Mountain Power	2.29	4616.780	Asphalt	3"	NA	Sandy	
16	14600 South / 3200 West	Cable TV	2"	PVC	Comcast	1.97	4617.232	Asphalt	2"	NA	Sandy	
17	14620 South / 3200 West	Water	8"	PVC	Bluffdale City	5.64	4616.197	Asphalt	3"	NA	Sandy	
18	14600 South / 3200 West	Buried Electric	4"	PVC	Rocky Mountain Power	2.40	4592.041	Natural Ground	NA	NA	Rocky, muddy	Found unknown 4" PVC and unknown 10" at same location
21	13760 South / 3160 West	Casing	Unknown	Steel	JVWCD	8.52	4539.970	Natural Ground	NA	NA	Sandy	Unable to uncover whole utility to verify size
22	3200 West / 13800 South	Gas	4"	PE	Questar Gas Company	3.33	4541.404	Natural Ground	NA	NA	Sandy	Found this line while looking for the end of the casing, also found casing at this location
23A	3200 West / 13800 South	Buried Telephone	.5"	DBC	Qwest Communications	3.74	4540.596	Natural Ground	NA	NA	Sandy	Found one telephone line while looking for the end of casing, also located casing, will not need to dig
24	3200 West / 13800 South	Water	10"	PVC	Bluffdale City	4.64	4539.677	Asphalt	4"	NA	Sandy	Found this line while looking for the end of the casing, also found casing at this location
27	3200 West / Sanbom Dr.	Irrigation	12"	PVC	Riverton City	4.96	4547.875	Natural Ground	NA	NA	Muddy	
28	3200 West / Sanbom Dr.	Water	12"	DI	Riverton City	4.90	4547.296	Natural Ground	NA	NA	Muddy	
29	3200 West / Sanbom Dr.	Buried Electric	6"	PVC	Rocky Mountain Power	3.09	4549.126	Natural Ground	NA	NA	Sandy	
30	3218 West / 13400 South	Buried Telephone	1.5"	DBC	Qwest Communications	3.86	4555.102	Asphalt	6"	NA	Sandy	
31	3218 West / 13400 South	Gas	4"	PE	Questar Gas Company	3.69	4555.505	Asphalt	4"	NA	Sandy	
32	3218 West / 13400 South	Irrigation	14"	PVC	Riverton City	3.17	4555.848	Asphalt	4"	NA	Sandy	
33	3218 West / 13400 South	Gas	16"	Steel	Questar Gas Company	4.35	4554.891	Asphalt	4"	NA	Sandy	
34	3218 West / 13400 South	Water	12"	DI	Riverton City	3.93	4554.758	Asphalt	4"	NA	Sandy	
35	3218 West / 13400 South	Fiber Optic Cable	3 @ 4"	PVC	Qwest Communications	2.57	4556.284	Natural Ground	NA	NA	Sandy	
36	3150 West / 15000 South	Water	48"	PVC	JVWCD	13.50	4674.637	Asphalt	2"	NA	Rocky	Unable to uncover whole utility - verified size with JVWCD
37	3160 West / 13680 South	Water	12"	PVC	Riverton City	6.53	4547.021	Natural Ground	NA	NA	Clay, sandy	
41	3218 West / 13400 South	Water	30"	Steel	JVWCD	6.49	4553.227	Natural Ground	NA	NA	Sandy, gravel	
42	Pump House	Water	UNK	Concrete	Riverton City	4.06	4543.185	Natural Ground	NA	NA	Clay	Found west edge of thrust block - no pipe going to the west

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

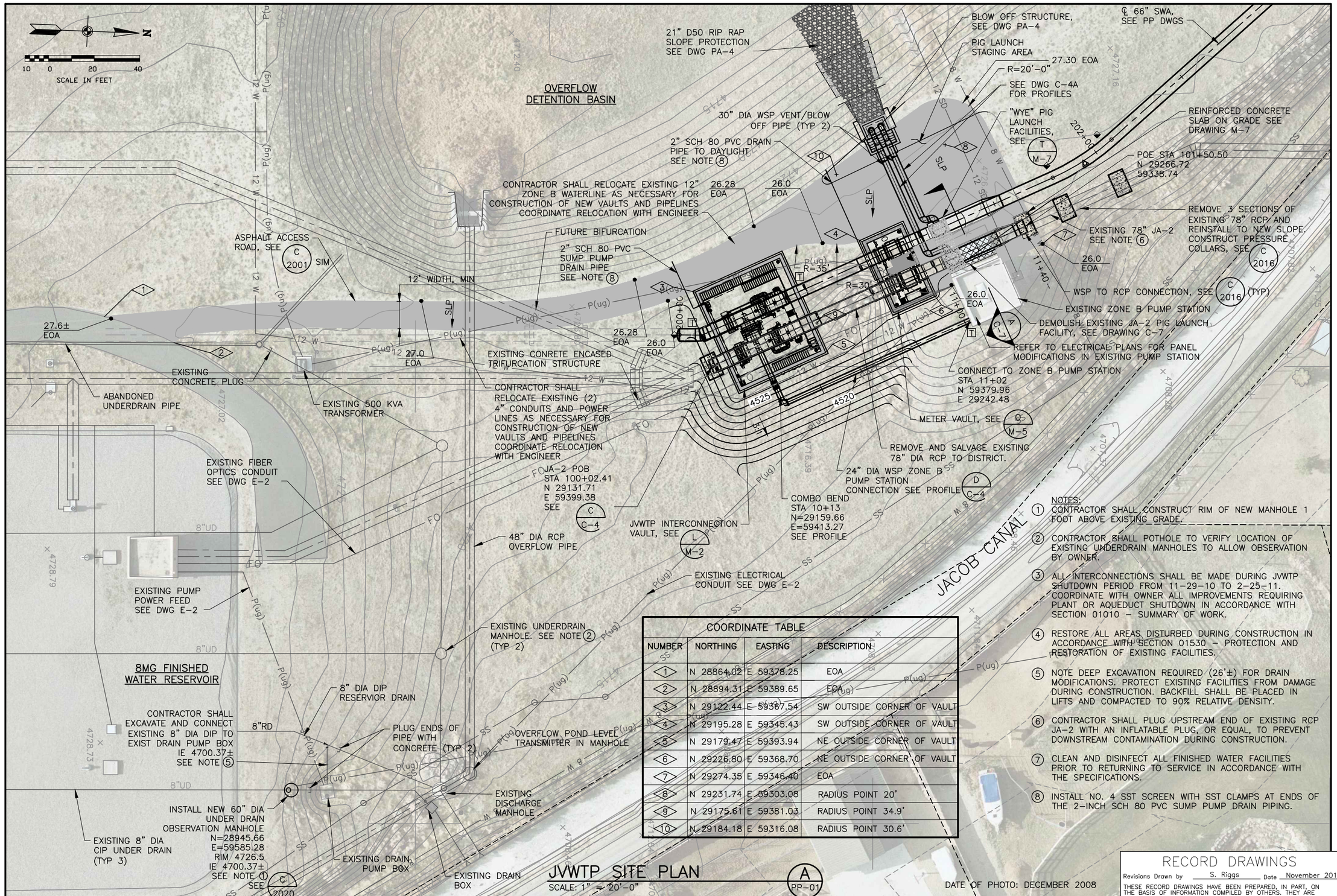
DESIGN T. OLSEN
DRAWN B. ABEL
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

CIVIL
13400 SOUTH PUMP STATION INTERCONNECTION PLAN AND PROFILE
STA 300+00 TO STA 302+22

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PP-14
SHEET 21 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PP14.dwg Dec01,2011 - 10:48am



COORDINATE TABLE			
NUMBER	NORTHING	EASTING	DESCRIPTION
1	N 28864.02	E 59378.25	EOA
2	N 28894.31	E 59389.65	EOA
3	N 29122.44	E 59367.54	SW OUTSIDE CORNER OF VAULT
4	N 29195.28	E 59345.43	SW OUTSIDE CORNER OF VAULT
5	N 29179.47	E 59393.94	NE OUTSIDE CORNER OF VAULT
6	N 29226.80	E 59368.70	NE OUTSIDE CORNER OF VAULT
7	N 29274.35	E 59346.40	EOA
8	N 29231.74	E 59303.08	RADIUS POINT 20'
9	N 29175.61	E 59381.03	RADIUS POINT 34.9'
10	N 29184.18	E 59316.08	RADIUS POINT 30.6'

NOTES:
1. CONTRACTOR SHALL CONSTRUCT RIM OF NEW MANHOLE 1 FOOT ABOVE EXISTING GRADE.
2. CONTRACTOR SHALL POTHOLE TO VERIFY LOCATION OF EXISTING UNDERDRAIN MANHOLES TO ALLOW OBSERVATION BY OWNER.
3. ALL INTERCONNECTIONS SHALL BE MADE DURING JVWTP SHUTDOWN PERIOD FROM 11-29-10 TO 2-25-11. COORDINATE WITH OWNER ALL IMPROVEMENTS REQUIRING PLANT OR AQUEDUCT SHUTDOWN IN ACCORDANCE WITH SECTION 01010 – SUMMARY OF WORK.
4. RESTORE ALL AREAS DISTURBED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION 01530 – PROTECTION AND RESTORATION OF EXISTING FACILITIES.
5. NOTE DEEP EXCAVATION REQUIRED (26'±) FOR DRAIN MODIFICATIONS. PROTECT EXISTING FACILITIES FROM DAMAGE DURING CONSTRUCTION. BACKFILL SHALL BE PLACED IN LIFTS AND COMPACTED TO 90% RELATIVE DENSITY.
6. CONTRACTOR SHALL PLUG UPSTREAM END OF EXISTING RCP JA-2 WITH AN INFLATABLE PLUG, OR EQUAL, TO PREVENT DOWNSTREAM CONTAMINATION DURING CONSTRUCTION.
7. CLEAN AND DISINFECT ALL FINISHED WATER FACILITIES PRIOR TO RETURNING TO SERVICE IN ACCORDANCE WITH THE SPECIFICATIONS.
8. INSTALL NO. 4 SST SCREEN WITH SST CLAMPS AT ENDS OF THE 2-INCH SCH 80 PVC SUMP PUMP DRAIN PIPING.

JVWTP SITE PLAN (A PP-01)
SCALE: 1" = 20'-0"

DATE OF PHOTO: DECEMBER 2008

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

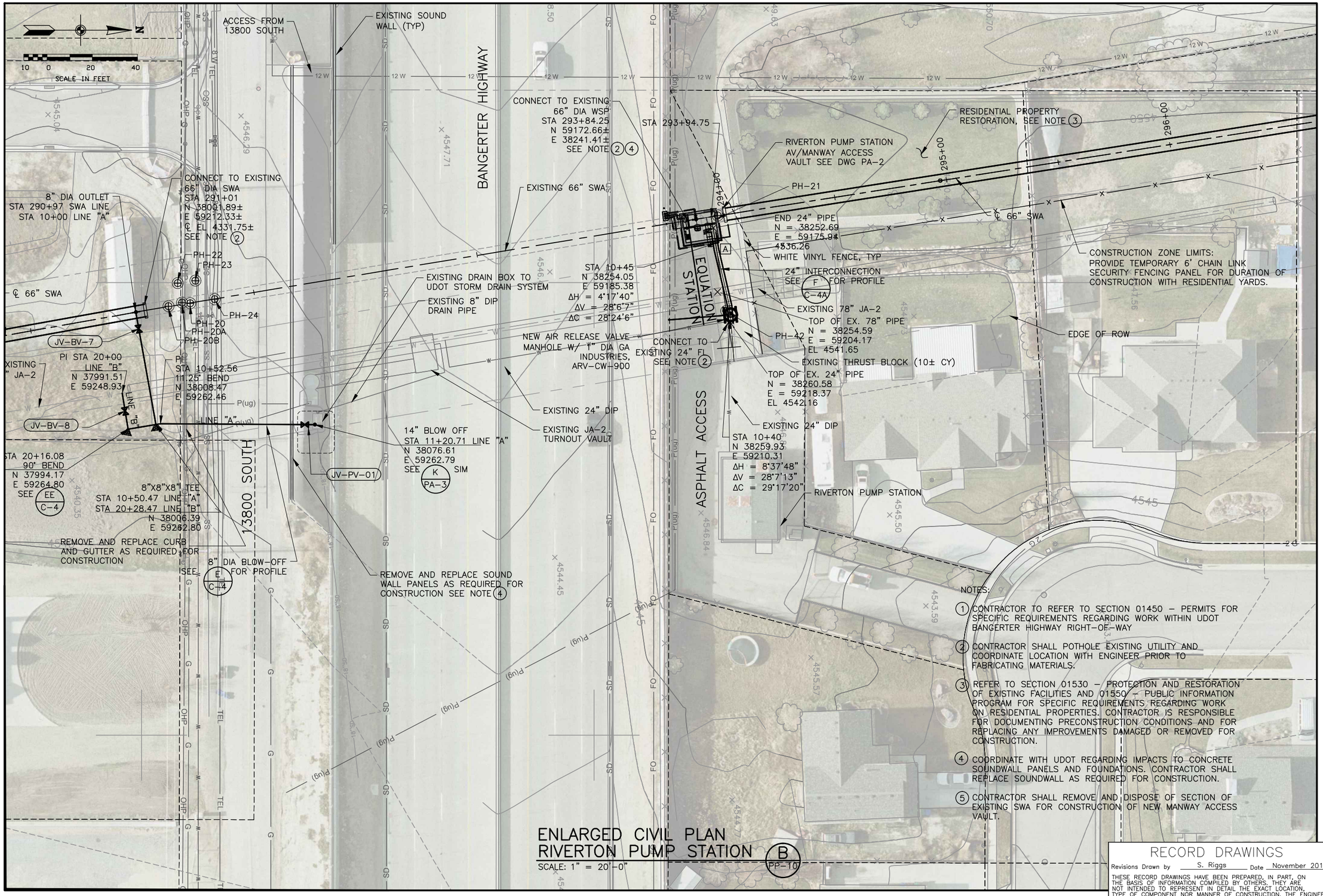
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN R.D./R.G.
REVIEW CHECKED M. COLLINS
APPROVED J. LUETTINGER

CIVIL
ENLARGED CIVIL PLAN JVWTP SITE
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-1
SHEET 22 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C01.dwg Dec01,2011 – 11:16am



ENLARGED CIVIL PLAN
RIVERTON PUMP STATION B
SCALE: 1" = 20'-0" PP-10

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED J. LUETTINGER APPROVED M. COLLINS
DESIGN T. OLSEN DESIGN R.D./R.G. DRAWN

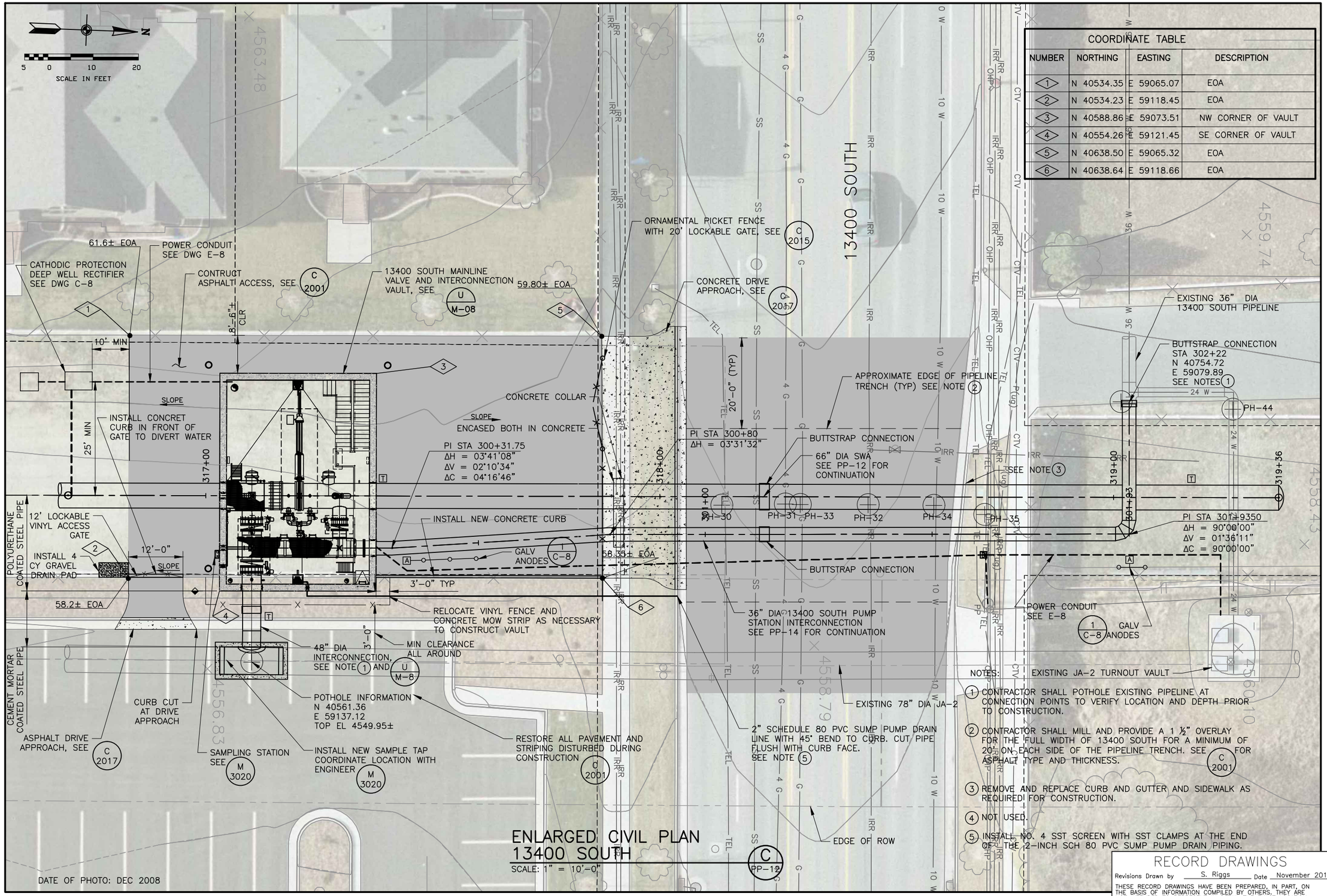
CIVIL

ENLARGED CIVIL PLAN– RIVERTON PUMP STATION

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. C-2
SHEET 23 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C02.dwg Dec01,2011 – 11:34am



COORDINATE TABLE

NUMBER	NORTHING	EASTING	DESCRIPTION
1	N 40534.35	E 59065.07	EOA
2	N 40534.23	E 59118.45	EOA
3	N 40588.86	E 59073.51	NW CORNER OF VAULT
4	N 40554.26	E 59121.45	SE CORNER OF VAULT
5	N 40638.50	E 59065.32	EOA
6	N 40638.64	E 59118.66	EOA

NOTES:

1. CONTRACTOR SHALL POTHOLE EXISTING PIPELINE AT CONNECTION POINTS TO VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL MILL AND PROVIDE A 1 ½" OVERLAY FOR THE FULL WIDTH OF 13400 SOUTH FOR A MINIMUM OF 20' ON EACH SIDE OF THE PIPELINE TRENCH. SEE C 2001 FOR ASPHALT TYPE AND THICKNESS.
3. REMOVE AND REPLACE CURB AND GUTTER AND SIDEWALK AS REQUIRED FOR CONSTRUCTION.
4. NOT USED.
5. INSTALL NO. 4 SST SCREEN WITH SST CLAMPS AT THE END OF THE 2-INCH SCH 80 PVC SUMP PUMP DRAIN PIPING.

ENLARGED CIVIL PLAN 13400 SOUTH

SCALE: 1" = 10'-0"

C PP-12

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

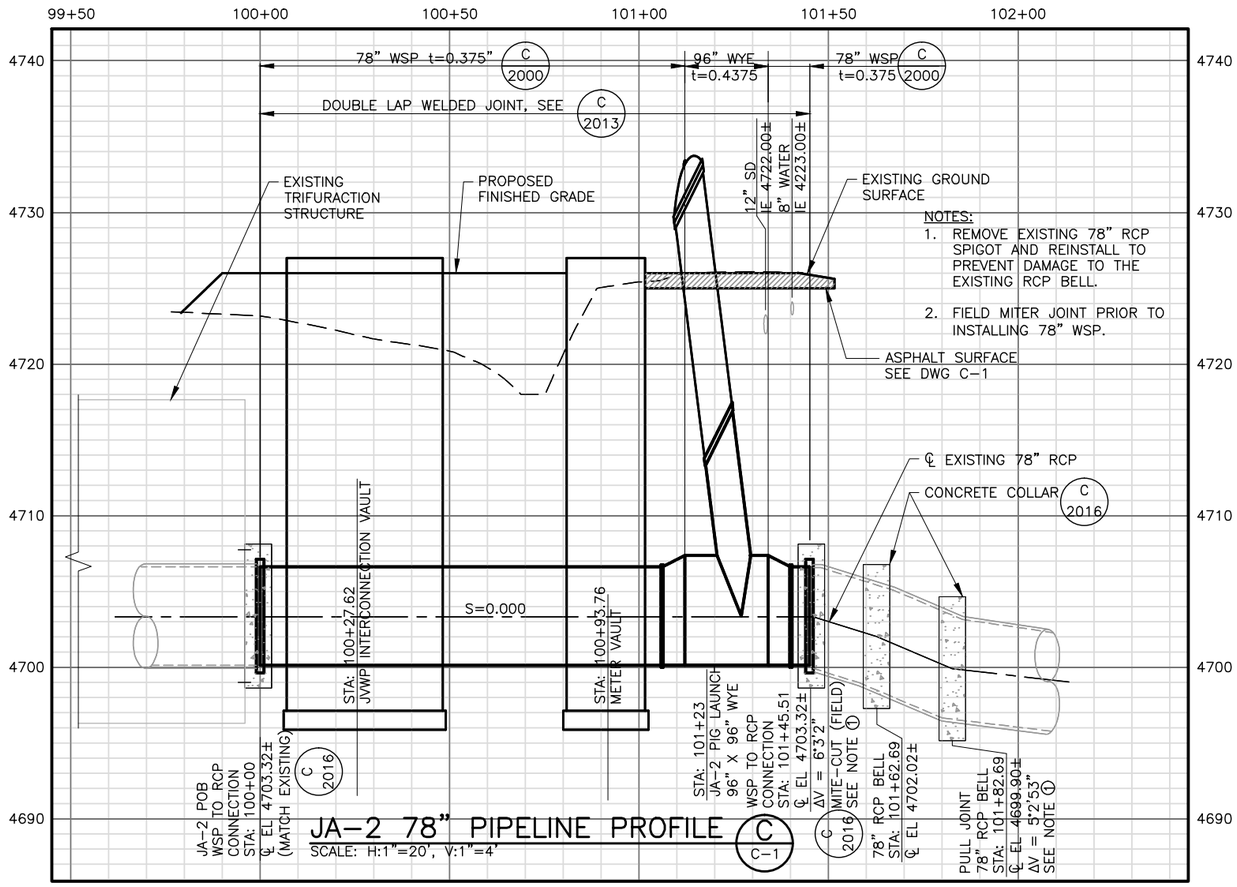
DESIGN T. OLSEN
DRAWN R.D. / B.A.
REVIEW CHECKED M. COLLINS
APPROVED J. LUETTINGER

CIVIL
PLAN – 13400 SOUTH MAINLINE INTERCONNECTION PIPING AND VAULT

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

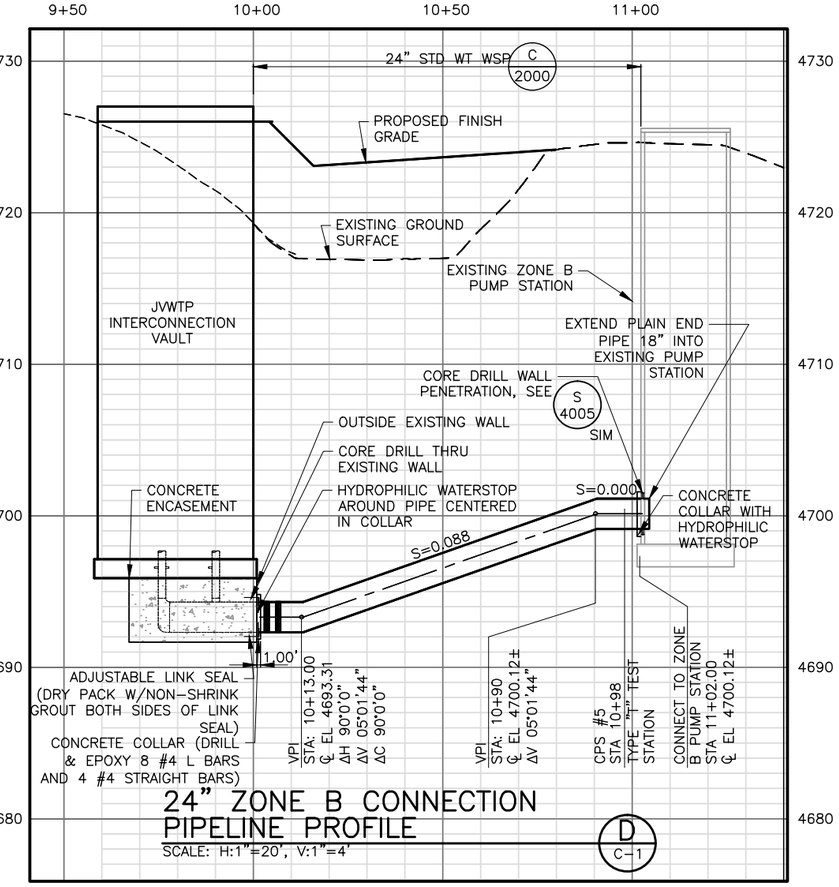
DRAWING NO. C-3
SHEET 24 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C03.dwg Dec27,2011 – 3:06pm



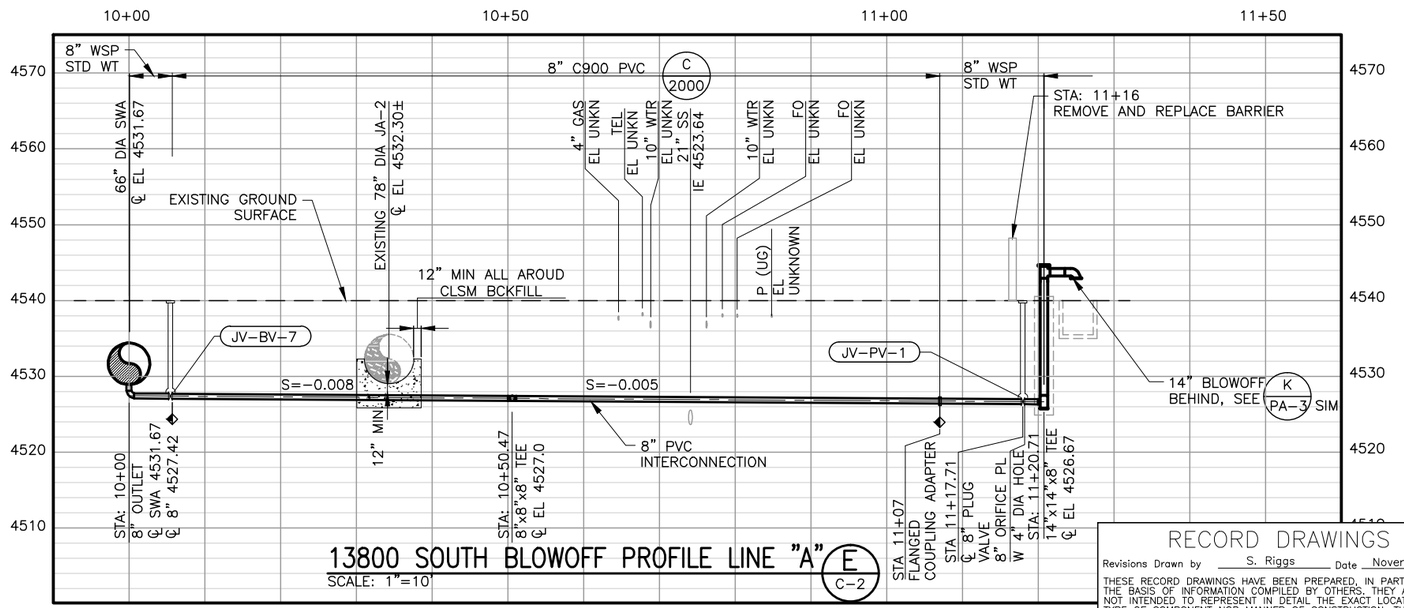
JA-2 78" PIPELINE PROFILE (C)

SCALE: H:1"=20', V:1"=4' — C-1



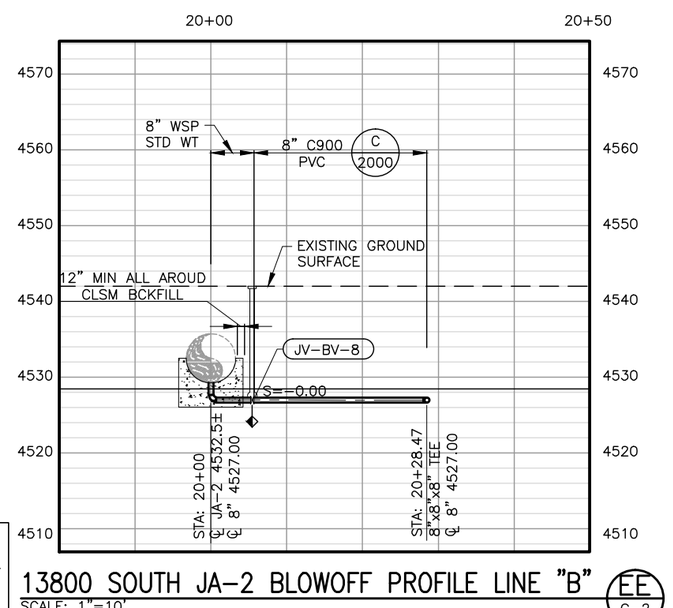
24" ZONE B CONNECTION PIPELINE PROFILE (D)

SCALE: H:1"=20', V:1"=4' — C-1



13800 SOUTH BLOWOFF PROFILE LINE "A" (E)

SCALE: 1"=10' — C-2



13800 SOUTH JA-2 BLOWOFF PROFILE LINE "B" (EE)

SCALE: 1"=10' — C-2

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN — REVIEW CHECKED J. LUETTINGER

DRAWN R.D./R.G. — APPROVED M. COLLINS

CIVIL

PROFILES - 1

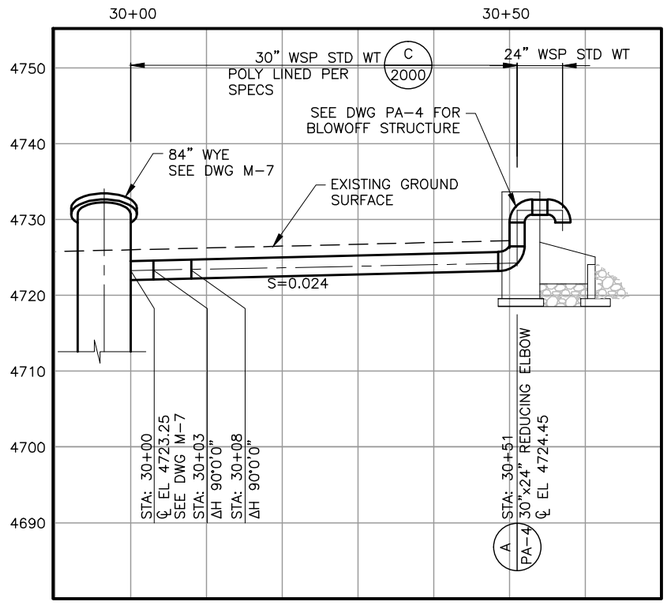
PROJECT NUMBER 010-08-03

DATE: FEBRUARY 2010

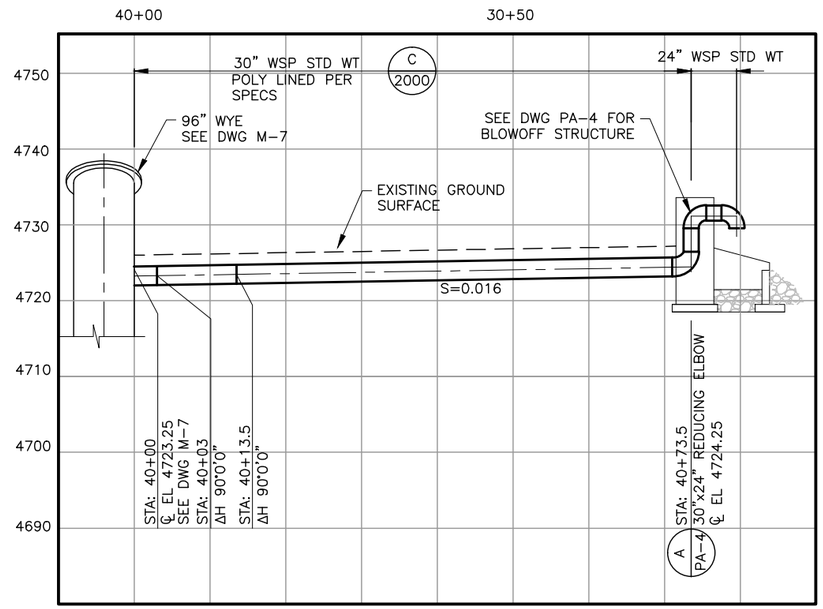
DRAWING NO. C-4

SHEET 25 OF 110

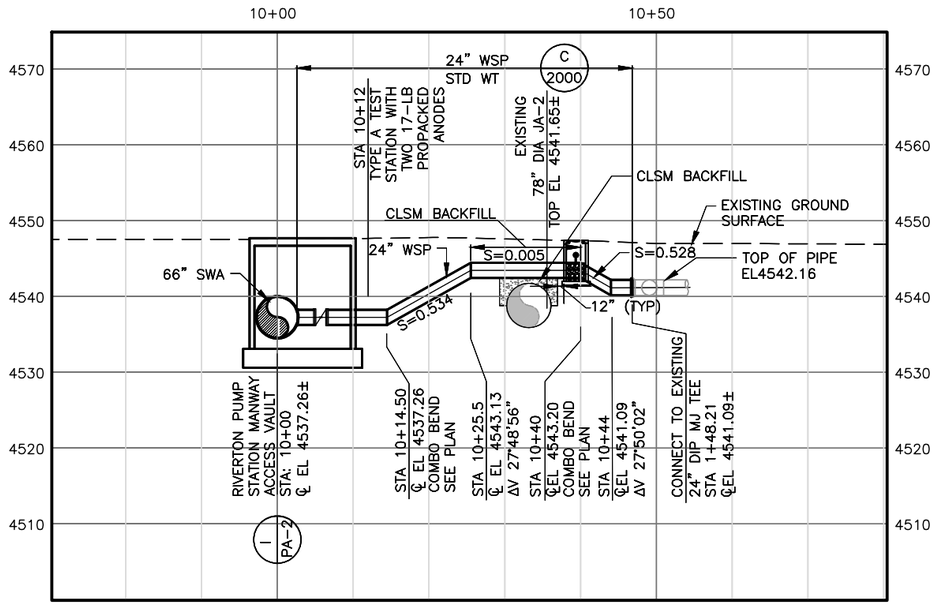
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C04.dwg Dec01,2011 - 2:20pm



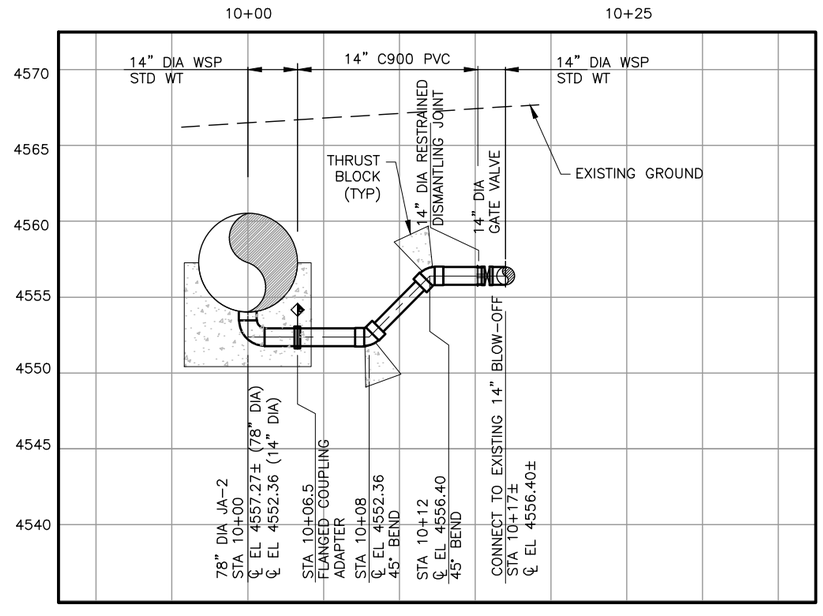
SWA AIR VENT/ BLOWOFF PROFILE (G, C-1)
SCALE: 1"=10'



JA-2 AIR VENT/BLOWOFF PROFILE (H, C-1)
SCALE: 1"=10'



RIVERTON PUMP STATION INTERCONNECT PROFILE (F, C-2)
SCALE: 1"=10'



ULDC BLOWOFF PROFILE (G, PP-7)
SCALE: 1"=5'

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

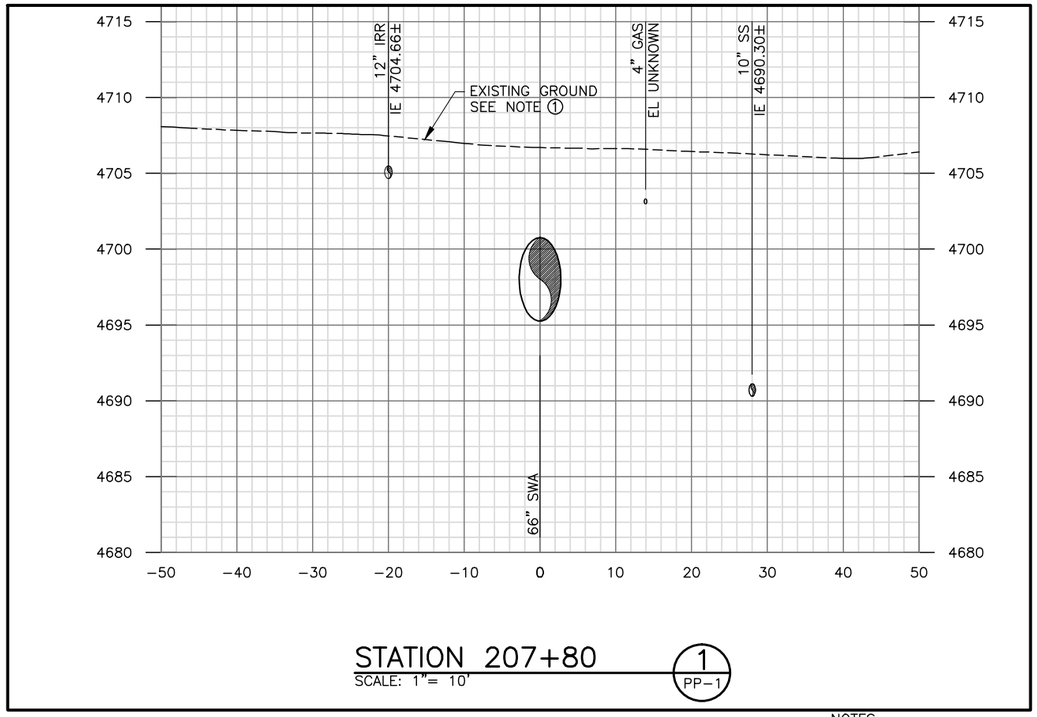
DESIGN T. OLSEN | REVIEW CHECKED M. COLLINS
DRAWN R.D./R.G. | APPROVED J. LUETTINGER

CIVIL
PROFILES – 2

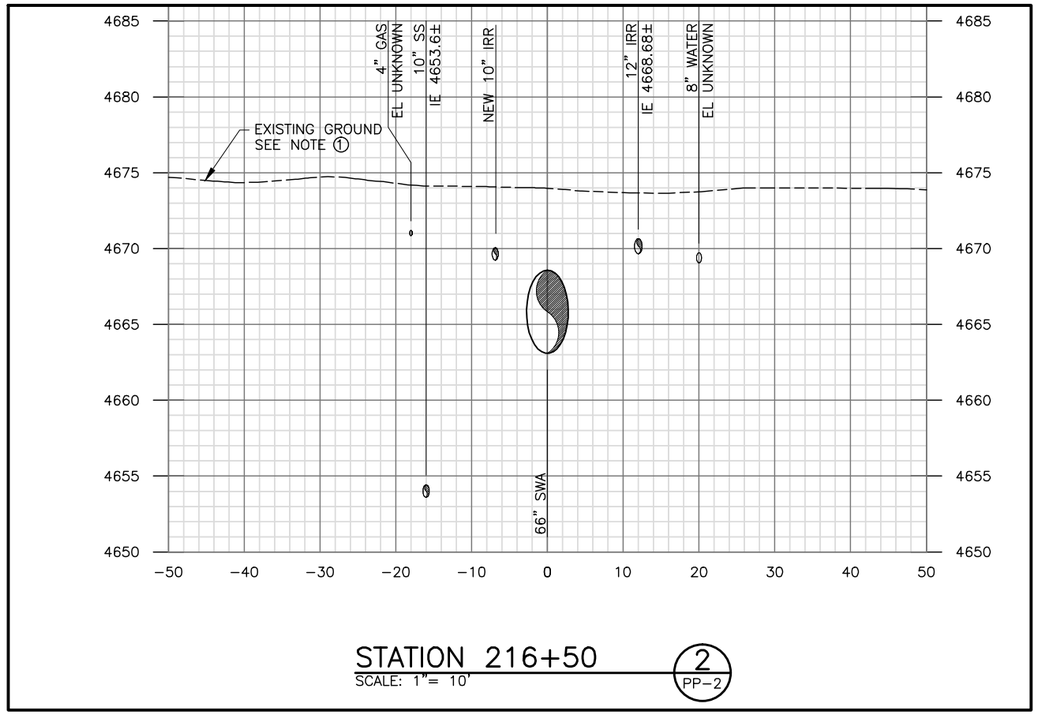
PROJECT NUMBER 010-08-03
DATE: FEBRUARY 2010

DRAWING NO. C-4A
SHEET 26 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C04A.dwg Dec01,2011 – 3:14pm

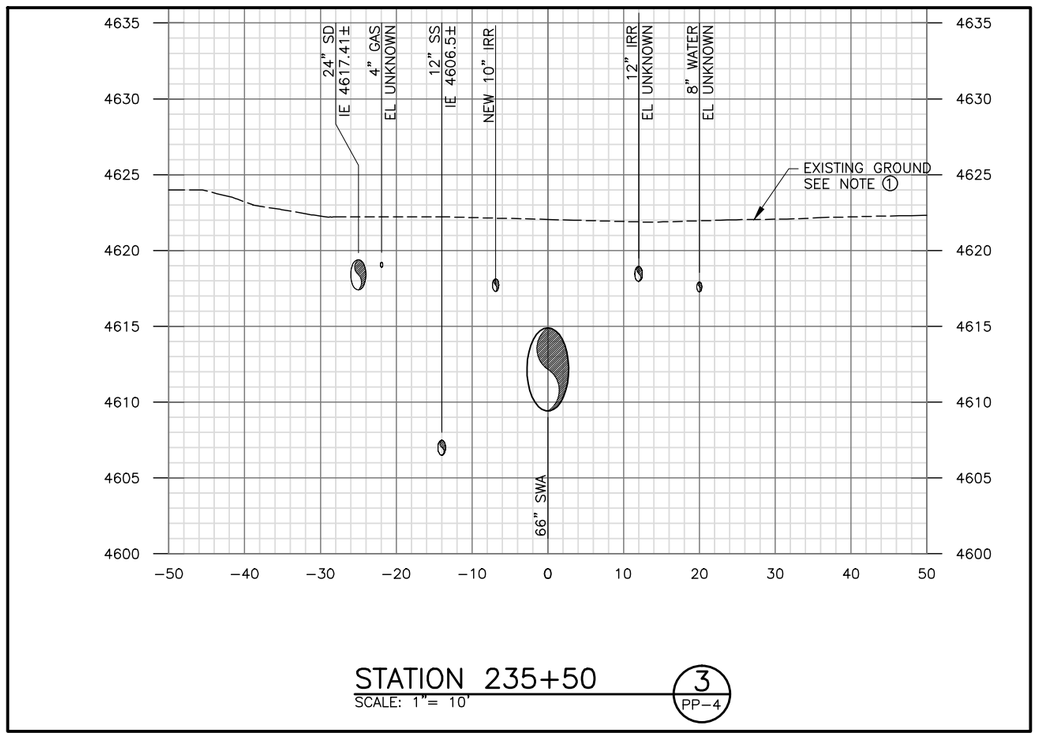


STATION 207+80
SCALE: 1"= 10'
1 PP-1

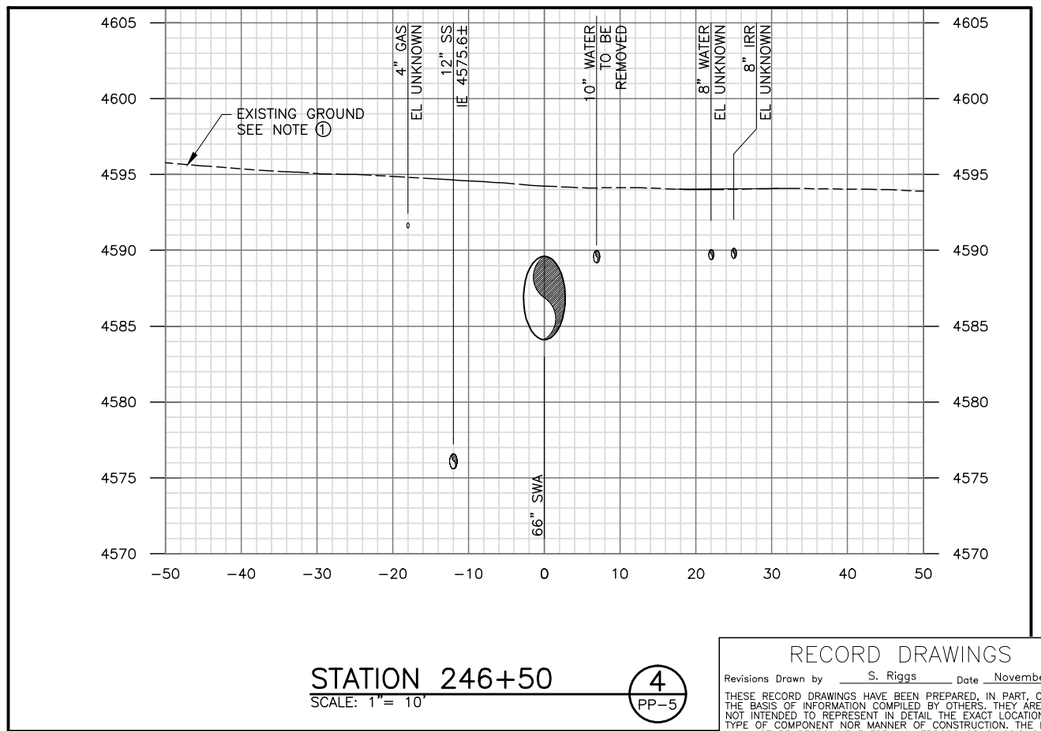


STATION 216+50
SCALE: 1"= 10'
2 PP-2

NOTES:
① CROSS SECTION PROVIDED TO ILLUSTRATE APPROXIMATE LOCATION OF UTILITIES ADJACENT TO SWA IN 3200 WEST. EXISTING SURFACE IS SHOWN. REFER TO SCHEDULE C 3200 WEST ROAD IMPROVEMENTS FOR DESIGN GRADE OF NEW ASPHALT SURFACE.



STATION 235+50
SCALE: 1"= 10'
3 PP-4



STATION 246+50
SCALE: 1"= 10'
4 PP-5

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

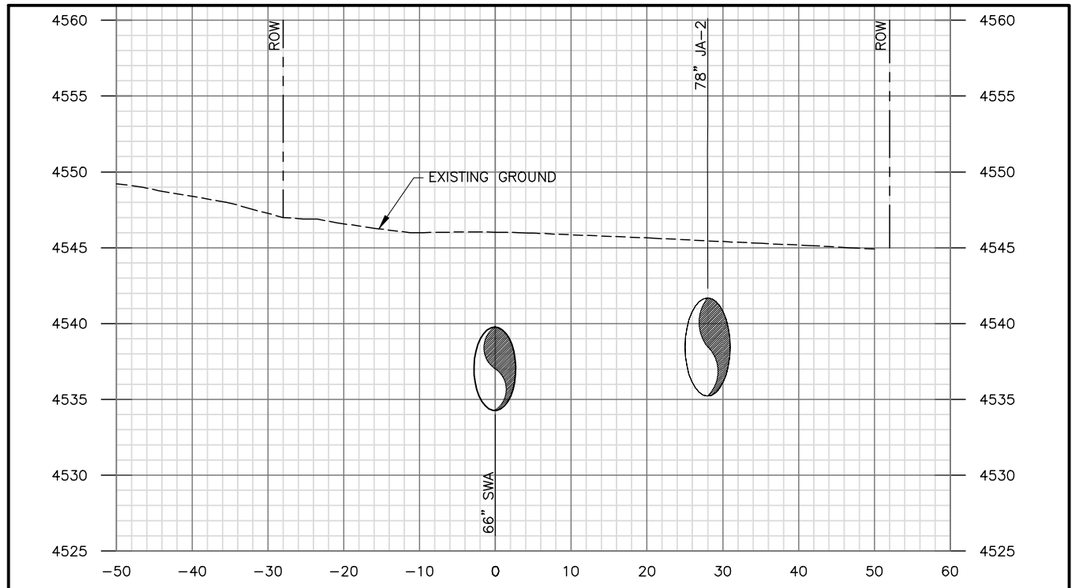
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DRAWN R.D./R.G.
REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

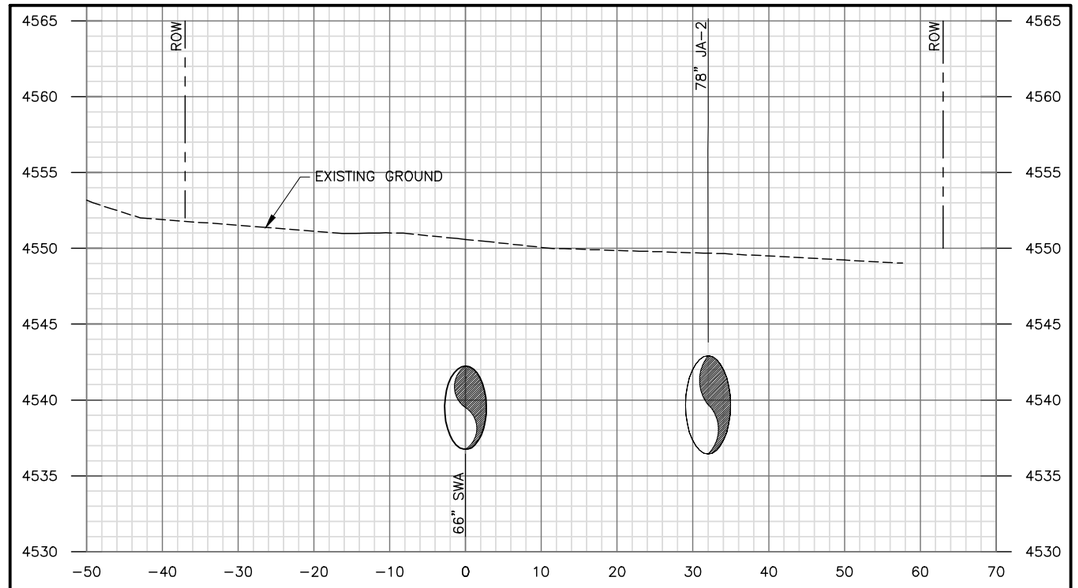
CIVIL
CROSS SECTIONS – 1
DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. C-5
SHEET 27 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C05.dwg Nov15,2011 – 10:50am



STATION 286+50 — 5 / PP-9
SCALE: 1"= 10'



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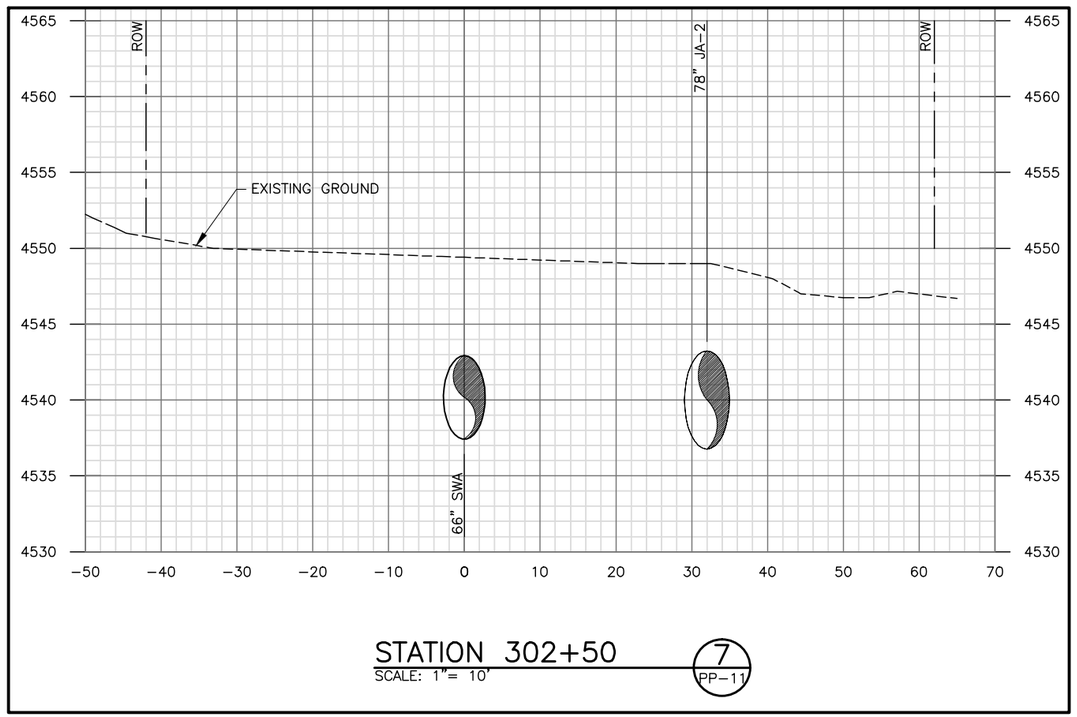
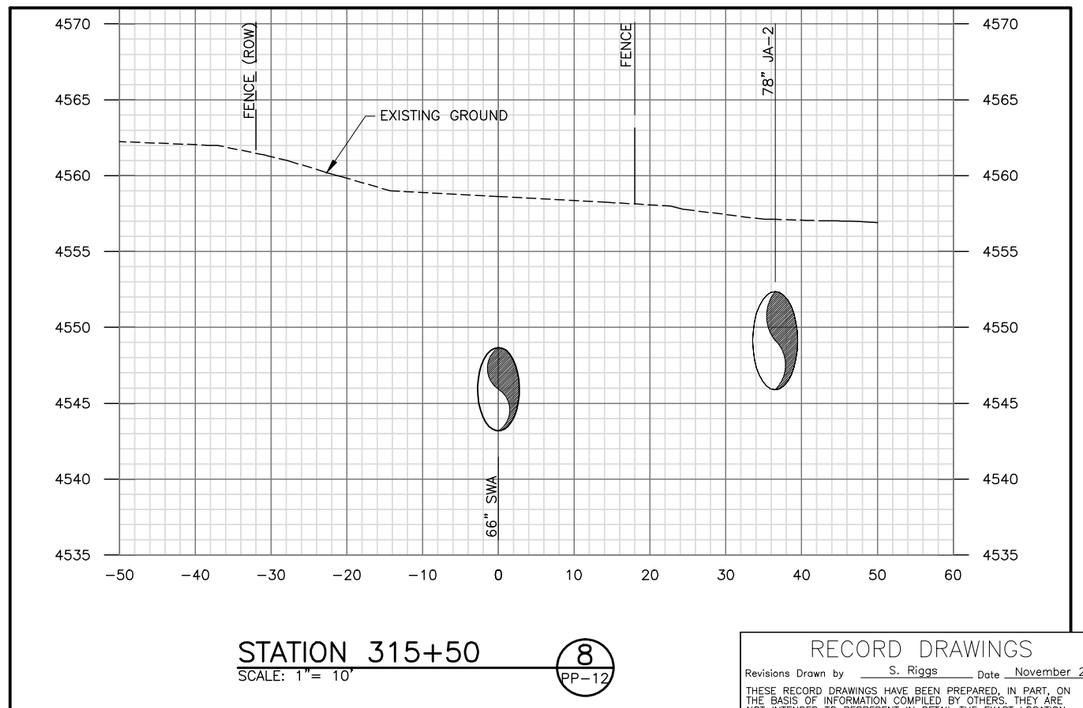
SCALE: 1"= 10'



STATION 302+50 — 7 / PP-11
SCALE: 1"= 10'



STATION 315+50 — 8 / PP-12
SCALE: 1"= 10'

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DRAWN R.D./R.G.

REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

CIVIL

CROSS SECTIONS - 2

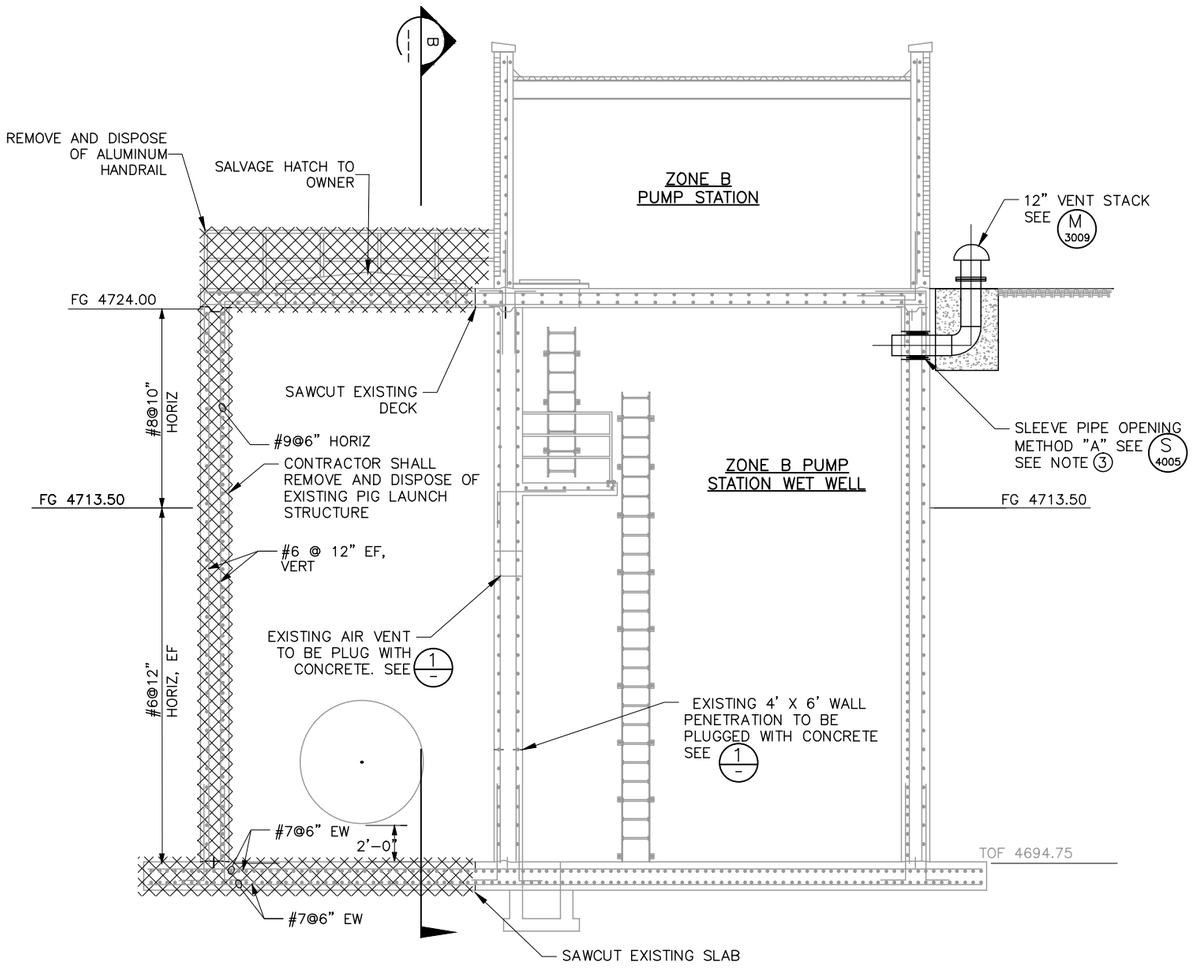
PROJECT NUMBER 010-08-03

DATE: FEBRUARY 2010

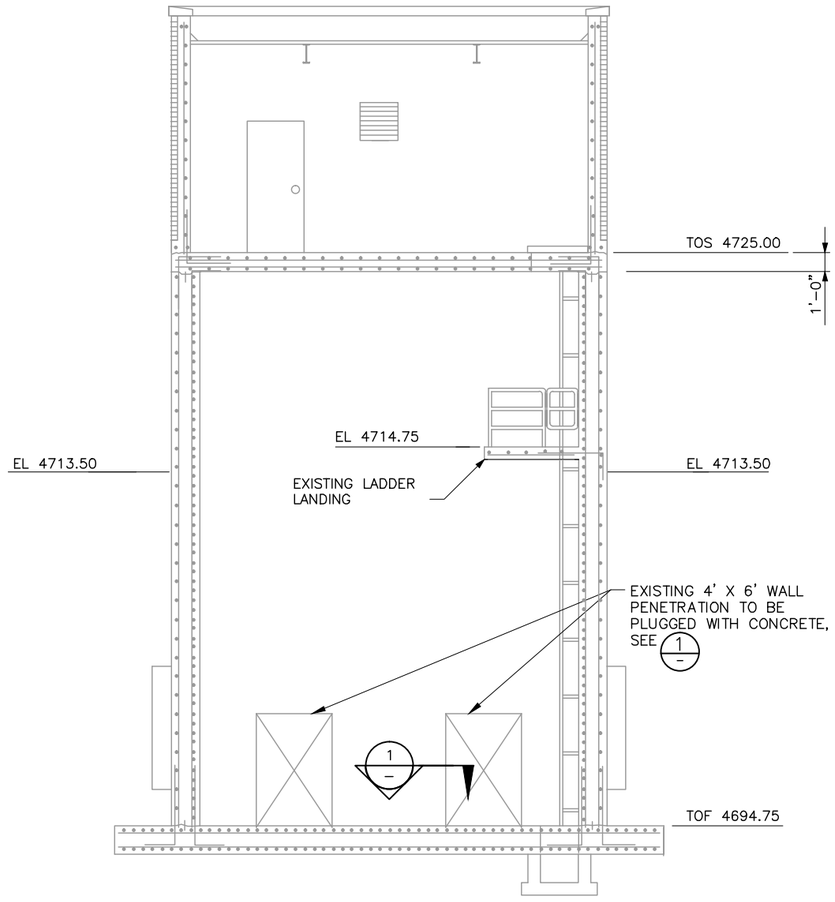
DRAWING NO. C-6

SHEET 28 OF 110

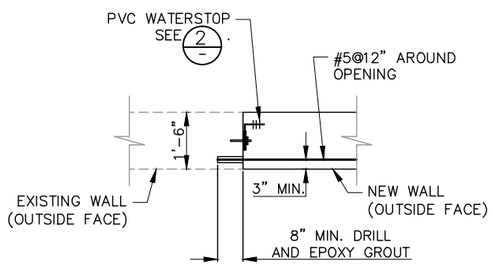
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C06.dwg Nov30,2011 - 9:16am



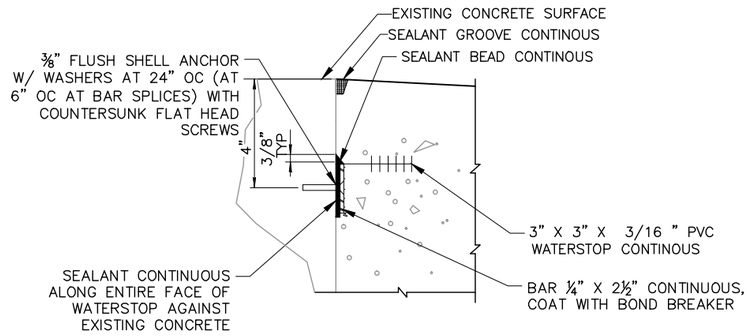
SECTION A 1/4"=1'-0" C-1



SECTION B 1/4"=1'-0" ---



DETAIL 1 1/2 "=1'-0" 1 -



WATERSTOP AT EXISTING SURFACE 2 NO SCALE -

NOTE:

1. ELEVATIONS ON DRAWINGS REFERENCE NGVD29 VERTICAL DATUM
2. CONTRACTOR SHALL DISINFECT WETWELL AFTER CONSTRUCTION IN ACCORDANCE WITH SECTION 02643.
3. CONTRACTOR SHALL CORE DRILL AND CONNECT NEW 12" AIR VENT TO EXISTING ZONE B PUMP STATION. COORDINATE FINAL LOCATION OF AIR VENT WITH ENGINEER IN THE FIELD.

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DRAWN B. ABEL

REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

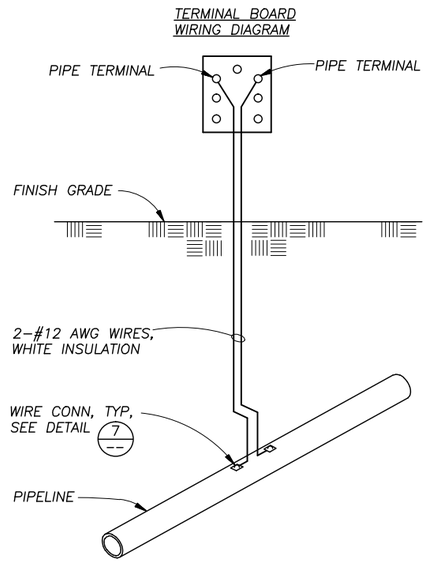
EXISTING JA-2 PIG LAUNCH STRUCTURE DEMOLITION

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. C-7

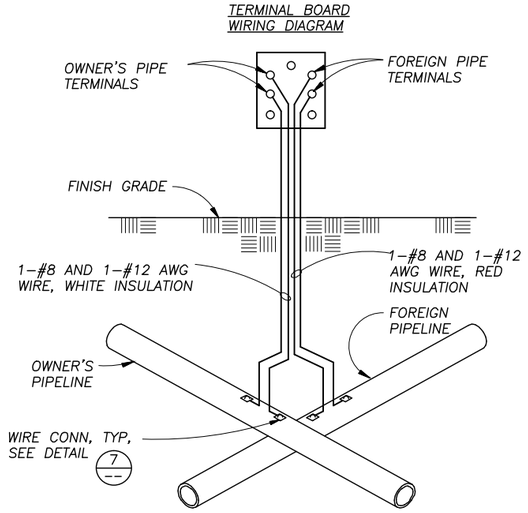
SHEET 29 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C07.dwg Dec01,2011 – 3:45pm



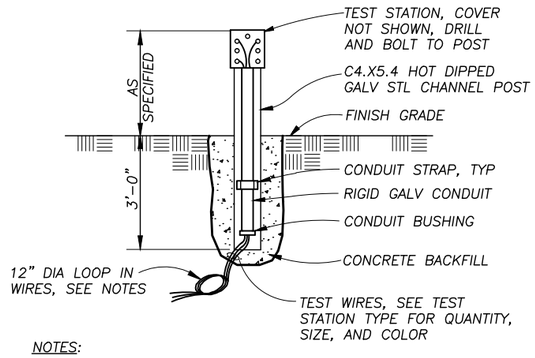
NOTE: SEE POST OR FLUSH MOUNTED TEST STATION DETAILS AS APPLICABLE FOR TEST STATION STYLE REQUIRED.

TYPE T TEST STATION (1)
NTS



NOTE:
1. PRIOR TO MAKING WIRE CONNECTIONS CONTACT FOREIGN PIPELINE OWNER FOR APPROVAL.
2. SEE POST OR FLUSH MOUNTED TEST STATION DETAILS AS APPLICABLE FOR TEST STATION STYLE REQUIRED.

TYPE F TEST STATION (2)
NTS



NOTES:
1. TEST STATION TO BE ALUMINUM BODY AND LID WITH THREADED CONNECTION FOR CONDUIT.
2. QUANTITY OF TERMINALS AND WIRING CONNECTIONS VARIES, SEE APPLICABLE TEST STATION DETAILS FOR TYPE OF TEST STATION
3. ALL MOUNTING HARDWARE TO BE TYPE 304 STAINLESS STEEL
4. PROVIDE WIRE LOOP AT BASE OF POST MOUNTED TEST STATION TO MINIMIZE SETTLEMENT STRESSES ON WIRE

POST MOUNTED, STEEL POST (3)
NTS

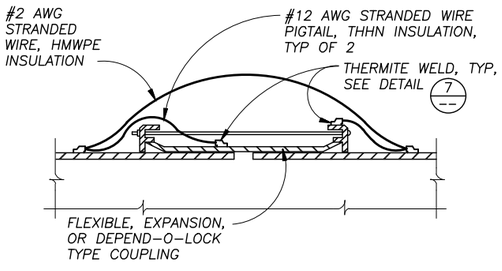
GENERAL NOTES

TEST STATIONS:

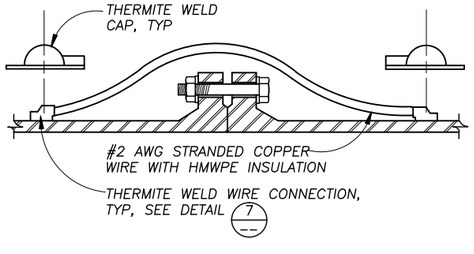
1. FOR TEST STATION LOCATIONS SEE PIPELINE PLAN AND PROFILE SHEETS.
2. TEST STATIONS SHALL BE POST MOUNTED TEST STATIONS WITH STEEL POST AND CONCRETE ENCASEMENT UNLESS OTHERWISE INDICATED.
3. TEST WIRE CONNECTIONS TO FOREIGN PIPELINES SHALL BE PERFORMED BY THE CONTRACTOR, UNLESS OWNER OF FOREIGN PIPELINE REQUIRES OTHERWISE.
4. ALL TEST LEADS LOCATED BENEATH PAVEMENT OR FUTURE ROADS SHALL BE PLACED IN PVC COATED RIGID CONDUIT FROM CL OF PIPE TO TEST STATION. INSTALL CONDUIT PERPENDICULAR TO PIPE.

ELECTRICAL CONTINUITY:

1. ALL BURIED AND VAULT JOINTS SHALL BE BONDED FOR ELECTRICAL CONTINUITY, EXCEPT WELDED OR INSULATED JOINTS.
2. PROVIDE TWO BONDS ON EACH JOINT UNLESS SHOWN OTHERWISE.
3. FLEXIBLE COUPLINGS, FLANGE COUPLING ADAPTERS, AND DEPEND-O-LOCK JOINTS SHALL BE BONDED AS SHOWN ON DETAILS. IF A SPECIFIC JOINT IS NOT SHOWN, PROVIDE BOND AS SHOWN FOR A SIMILAR JOINT STYLE SHOWN.

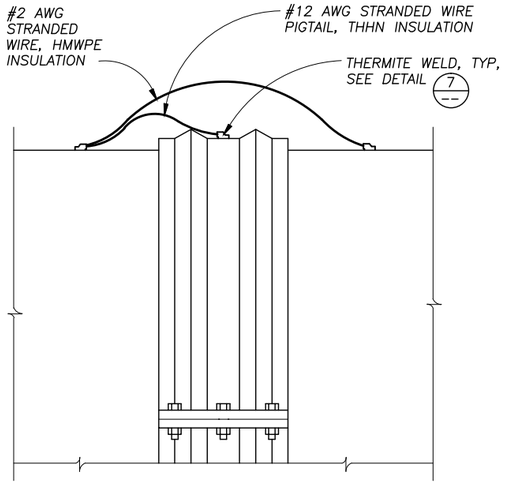


FLEXIBLE JOINT BOND (4)
NTS



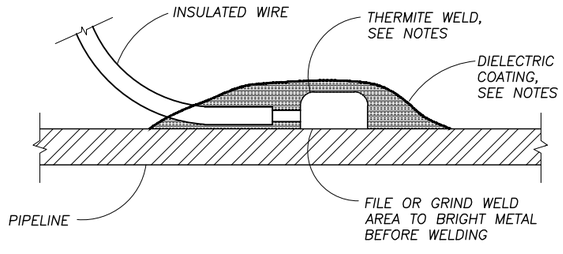
NOTE: INSTALL TWO BOND WIRES AT EACH PIPE JOINT.

FLANGED JOINT BOND (5)
NTS



NOTE: INSTALL TWO BOND WIRES AT EACH PIPE JOINT.

DEPEND–O–LOCK JOINT BOND (6)
NTS



NOTES:
1. MAKE WIRE CONNECTION TO PIPE AT FIELD JOINT WHERE HOLDBACK OCCURS ON PIPELINE COATING.
2. MAINTAIN SEPARATION BETWEEN MULTIPLE TEST WIRE CONNECTIONS OF ONE PIPE DIA OR 24", WHICHEVER IS LESS.
3. COPPER SLEEVE REQUIRED FOR #2 AWG JOINT BONDS OR FOR #12 AWG OR SMALLER TEST WIRES.
4. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO PIPE SIZE AND PIPE MATERIAL, CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE
5. COAT COMPLETED CONNECTIONS AS SHOWN AND SPECIFIED.
6. PIPELINE JOINT COATING NOT SHOWN FOR CLARITY.

STEEL AND DUCTILE IRON PIPE WIRE CONNECTION (7)
NTS

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS: NO. | DATE | REV. BY | DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DRAWN B. ABEL
REVIEW CHECKED J. LUETTINGER APPROVED M. COLLINS

CIVIL
CATHODIC PROTECTION DETAILS
DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. C-8
SHEET 30 OF 110

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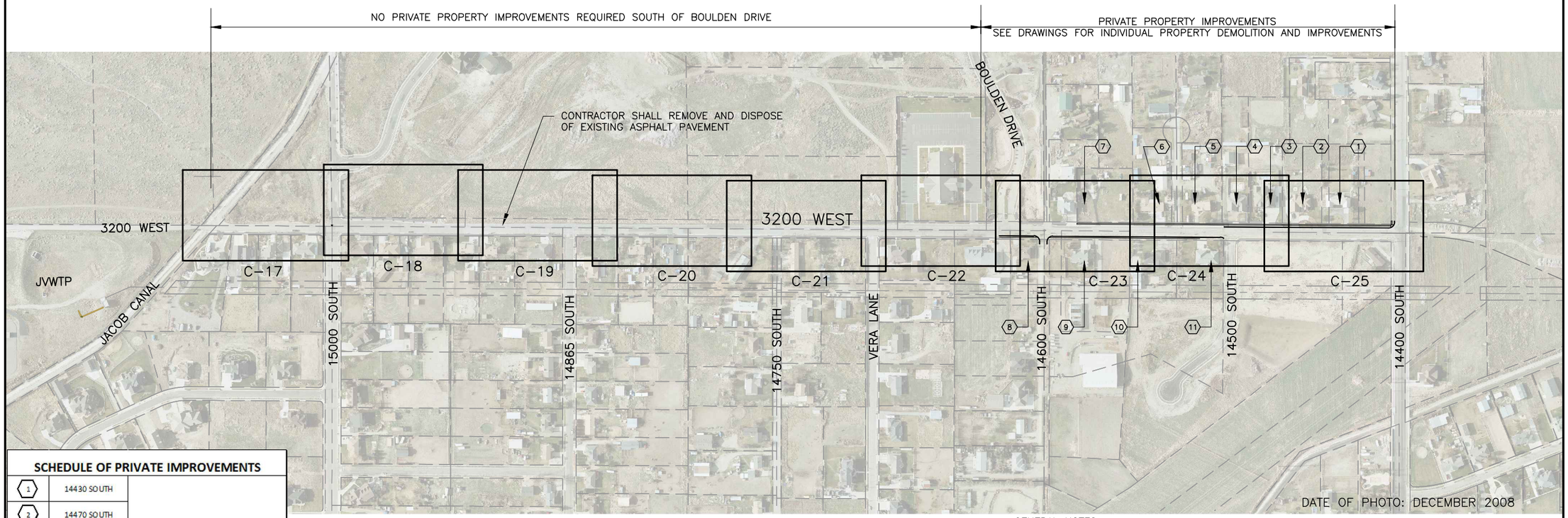
3200 WEST ROAD IMPROVEMENTS

N

100 0 200 400
SCALE IN FEET



SCHEDULE OF PRIVATE IMPROVEMENTS

1	14430 SOUTH	SEE DRAWING C-16A FOR PROPERTY IMPROVEMENT REQUIREMENTS
2	14470 SOUTH	
3	14480 SOUTH	
4	14490 SOUTH	
5	14510 SOUTH	
6	14524 SOUTH	
7	14564 SOUTH	
8	14625 SOUTH	
9	14569 SOUTH	
10	14539 SOUTH	
11	14507 SOUTH	

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH BLUFFDALE CITY STANDARDS.
2. REFER TO SECTION 01506 – TRAFFIC CONTROL FOR SPECIFIC TRAFFIC CONTROL REQUIREMENTS.
3. REFER TO SECTION 01010 – SUMMARY OF WORK FOR CONSTRUCTION SCHEDULE CONSTRAINTS ASSOCIATED WITH 3200 WEST ROAD IMPROVEMENTS.
4. CONTRACTOR IS RESPONSIBLE FOR PUBLIC INFORMATION DURING CONSTRUCTION. REFER TO SECTION 01550 – PUBLIC INFORMATION PROGRAM FOR REQUIREMENTS.
5. SEE DRAWING C-14 FOR CONSTRUCTION SCHEDULE AND DETOUR PLAN.
6. SEE DRAWINGS C-15 AND C-16 FOR 3200 WEST DEMOLITION PLAN.
7. SEE DRAWINGS C-30 AND C-31 FOR FOR 3200 WEST STRIPING PLAN.
8. RAISE OR LOWER MANHOLES, VALVE BOXES, WATER METERS, AND UTILITIES AS REQUIRED TO MATCH NEW ROAD PROFILE AND FINAL GRADE.

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DRAWN B. ABEL
REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL
3200 WEST
ROAD IMPROVEMENTS
OVERALL PLAN

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-13
SHEET 35 OF 110

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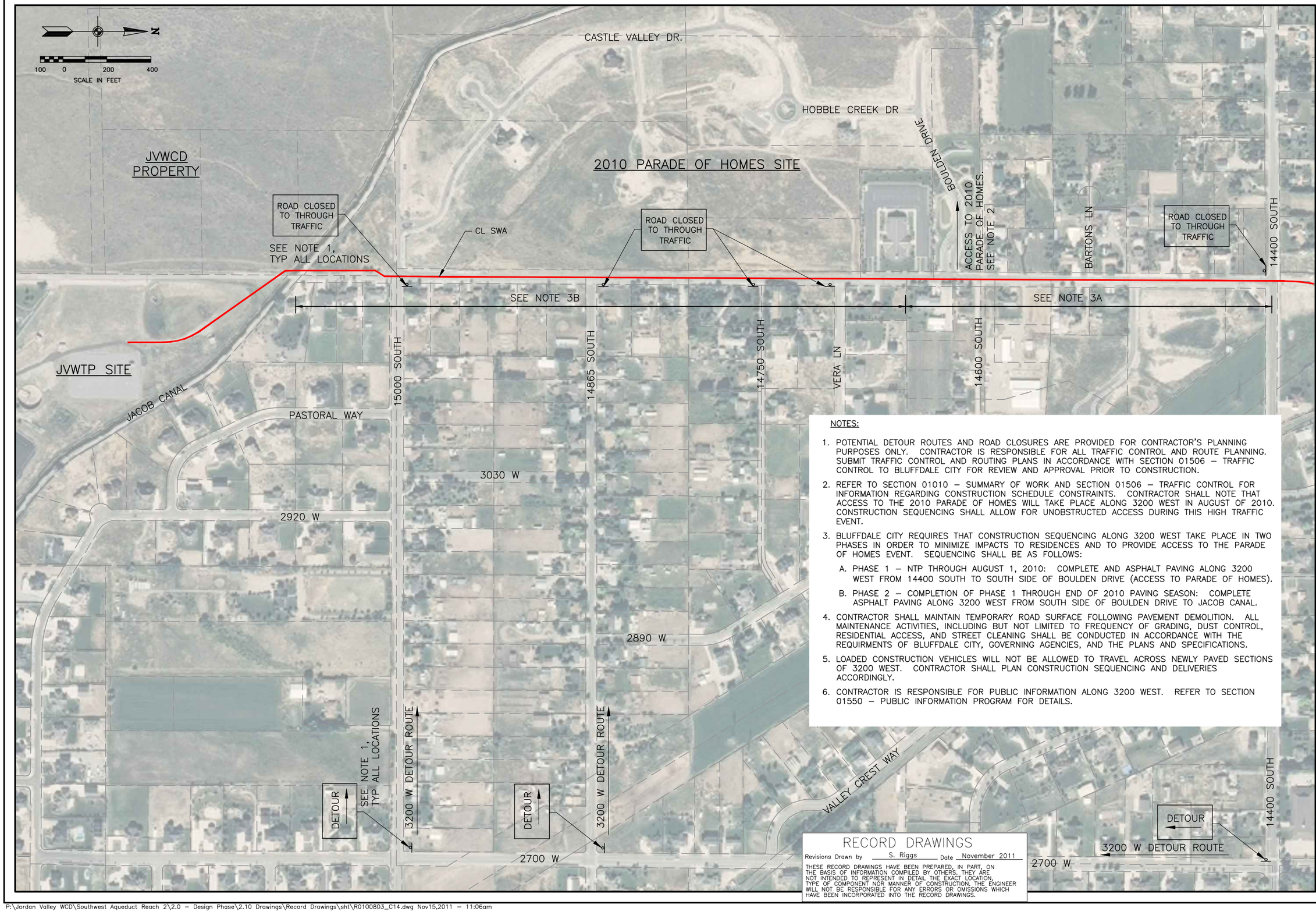

NOTES:

1. POTENTIAL DETOUR ROUTES AND ROAD CLOSURES ARE PROVIDED FOR CONTRACTOR'S PLANNING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL AND ROUTE PLANNING. SUBMIT TRAFFIC CONTROL AND ROUTING PLANS IN ACCORDANCE WITH SECTION 01506 – TRAFFIC CONTROL TO BLUFFDALE CITY FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. REFER TO SECTION 01010 – SUMMARY OF WORK AND SECTION 01506 – TRAFFIC CONTROL FOR INFORMATION REGARDING CONSTRUCTION SCHEDULE CONSTRAINTS. CONTRACTOR SHALL NOTE THAT ACCESS TO THE 2010 PARADE OF HOMES WILL TAKE PLACE ALONG 3200 WEST IN AUGUST OF 2010. CONSTRUCTION SEQUENCING SHALL ALLOW FOR UNOBSTRUCTED ACCESS DURING THIS HIGH TRAFFIC EVENT.
3. BLUFFDALE CITY REQUIRES THAT CONSTRUCTION SEQUENCING ALONG 3200 WEST TAKE PLACE IN TWO PHASES IN ORDER TO MINIMIZE IMPACTS TO RESIDENCES AND TO PROVIDE ACCESS TO THE PARADE OF HOMES EVENT. SEQUENCING SHALL BE AS FOLLOWS:
   A. PHASE 1 – NTP THROUGH AUGUST 1, 2010: COMPLETE AND ASPHALT PAVING ALONG 3200 WEST FROM 14400 SOUTH TO SOUTH SIDE OF BOULDEN DRIVE (ACCESS TO PARADE OF HOMES).
   B. PHASE 2 – COMPLETION OF PHASE 1 THROUGH END OF 2010 PAVING SEASON: COMPLETE ASPHALT PAVING ALONG 3200 WEST FROM SOUTH SIDE OF BOULDEN DRIVE TO JACOB CANAL.
4. CONTRACTOR SHALL MAINTAIN TEMPORARY ROAD SURFACE FOLLOWING PAVEMENT DEMOLITION. ALL MAINTENANCE ACTIVITIES, INCLUDING BUT NOT LIMITED TO FREQUENCY OF GRADING, DUST CONTROL, RESIDENTIAL ACCESS, AND STREET CLEANING SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIRMENTS OF BLUFFDALE CITY, GOVERNING AGENCIES, AND THE PLANS AND SPECIFICATIONS.
5. LOADED CONSTRUCTION VEHICLES WILL NOT BE ALLOWED TO TRAVEL ACROSS NEWLY PAVED SECTIONS OF 3200 WEST. CONTRACTOR SHALL PLAN CONSTRUCTION SEQUENCING AND DELIVERIES ACCORDINGLY.
6. CONTRACTOR IS RESPONSIBLE FOR PUBLIC INFORMATION ALONG 3200 WEST. REFER TO SECTION 01550 – PUBLIC INFORMATION PROGRAM FOR DETAILS.

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Bowen Collins & Associates, Inc. Consulting Engineers

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			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN B. ABEL
REVIEW K. BAGLEY
CHECKED
APPROVED J. LUETTINGER

CIVIL

3200 WEST CONSTRUCTION SCHEDULE AND DETOUR PLAN

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-14
SHEET 36 OF 110

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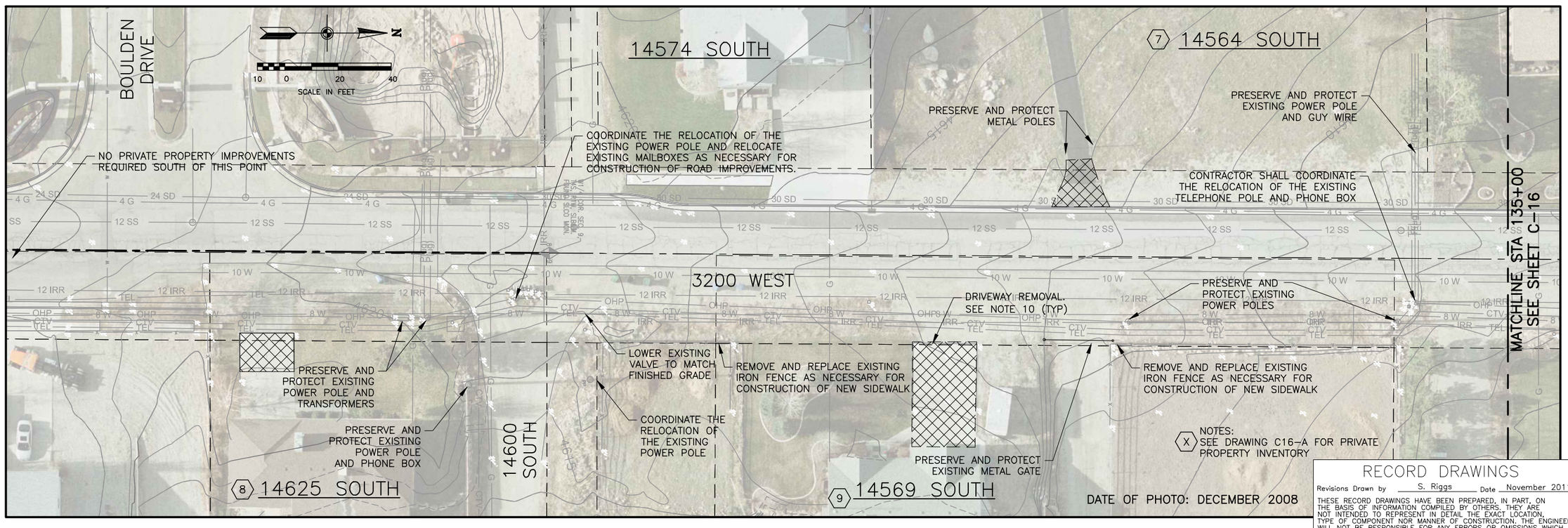
GENERAL NOTES FOR RESIDENTIAL IMPROVEMENTS:

1. COORDINATE ALL CONSTRUCTION ACTIVITIES IMPACTING PRIVATE RESIDENCES WITH PROPERTY OWNERS IN ACCORDANCE WITH SECTION 01550 – PUBLIC INFORMATION PROGRAM.
2. PERFORM SITE CONDITION SURVEY, INCLUDING PRECONSTRUCTION PHOTOGRAPHIC AND VIDEO DOCUMENTATION OF ALL PRIVATE IMPROVEMENTS, PRIOR TO CONSTRUCTION IN ACCORDANCE WITH SECTION 01335 – SITE CONDITIONS SURVEY. SUBMIT TO ENGINEER FOR REVIEW AND APPROVAL.
3. CONTRACTOR SHALL MAINTAIN A NEAT CONSTRUCTION AREA WITHIN PRIVATE PROPERTIES. CLEAN UP AND ORGANIZE SITE AND REMOVE POTENTIALLY DANGEROUS ITEMS FROM PRIVATE PROPERTIES DAILY FOLLOWING CONSTRUCTION.
4. CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL PRIVATE IMPROVEMENTS THAT ARE REMOVED OR DAMAGED DURING CONSTRUCTION TO EQUAL OR BETTER CONDITION. NOT ALL MINOR RESIDENTAIL IMPROVEMENTS ARE SHOWN ON THE PLANS.
5. RESTORE ALL IMPACTED RESIDENTIAL LAWNS WITH HIGH QUALITY SOD FOLLOWING CONSTRUCTION AND RE-GRADING OF YARDS. PROVIDE 4-INCHES MINIMUM TOP SOIL BENEATH ALL NEWLY SODDED AREAS.
6. UNLESS OTHERWISE NOTED ON PLANS, PROVIDE HIGH QUALITY SOD IN NEW PARKSTRIP BETWEEN SIDEWALK AND TBC.
7. AN ALLOWANCE HAS BEEN PROVIDED IN THE BID SCHEDULE FOR SPRINKLER SYSTEM IMPROVEMENTS ON EACH PRIVATE PROPERTY. CONTRACTOR SHALL PROVIDE A QUALIFIED SPRINKLER SYSTEM INSTALLER TO COORDINATE REMOVAL AND REPLACEMENT OF SPRINKLER SYSTEMS WITH EACH PROPERTY OWNER AS REQUIRED FOR CONSTRUCTION.
8. TEMPORARILY CAP SPRINKLER LINES IN ZONES IMPACTED BY CONSTRUCTION TO ALLOW IRRIGATION OF UNIMPACTED AREAS OF PROPERTY DURING CONSTRUCTION. REPLACE SPRINKLER SYSTEMS TO EQUAL OR BETTER CONDITION FOLLOWING CONSTRUCTION.
9. CONTRACTOR SHALL PROVIDE NEW SPRINKLER SYSTEMS WITHIN NEW 6-FOOT WIDE GRASS PARKSTRIP WHERE REQUIRED. CONTRACTOR'S SPRINKLER SYSTEM INSTALLER SHALL COORDINATE EXPANSION OF EXISTING RESIDENTIAL SPRINKLER SYSTEMS TO ACCOMMODATE ALL NEWLY SODDED PARKSTRIP AREAS. SPRINKLER CONTRACTOR SHALL ALSO PLACE (2) SLEEVES UNDER CONCRETE SIDEWALK FOR CONNECTION TO PROPERTY OWNERS IRRIGATION SYSTEMS.
10. NEATLY SAW CUT RESIDENTIAL DRIVEWAYS TO NEAREST CONSTRUCTION JOINT WHERE COMPLETE REMOVAL OF DRIVEWAY IS NOT REQUIRED. REPLACE DRIVEWAYS AND APPROACHES TO EQUAL OR BETTER CONDITION IN ACCORDANCE WITH BLUFFDALE CITY STANDARDS.
11. CONTRACTOR IS NOT RESPONSIBLE FOR REPLACEMENT OF TREES AND PLANTERS THAT ARE LOCATED WITHIN THE AREAS PROVIDED FOR THE NEW PARKSTRIP AND SIDEWALK. BLUFFDALE CITY WILL ADDRESS THIS ITEMS UNDER SEPARATE AGREEMENTS FOR THESE IMPROVEMENTS THAT ARE TO BE PERMANENTLY REMOVED.
12. CONTRACTOR'S PUBLIC INFORMATION MANAGER TO PROVIDE MINIMUM 14 DAYS NOTICE PRIOR TO REMOVAL OF TREES, LANDSCAPING AND OTHER IMPROVEMENTS TO ALLOW TIME FOR SALVAGE BY PRIVATE PROPERTY OWNER IF DESIRED. ITEMS WHICH ARE NOT SALVAGED BY OWNER SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR AS REQUIRED FOR CONSTRUCTION.



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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN B. ABEL
REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

CIVIL
3200 WEST
PRIVATE IMPROVEMENTS AND DEMOLITION PLAN-1

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-15
SHEET 37 OF 110

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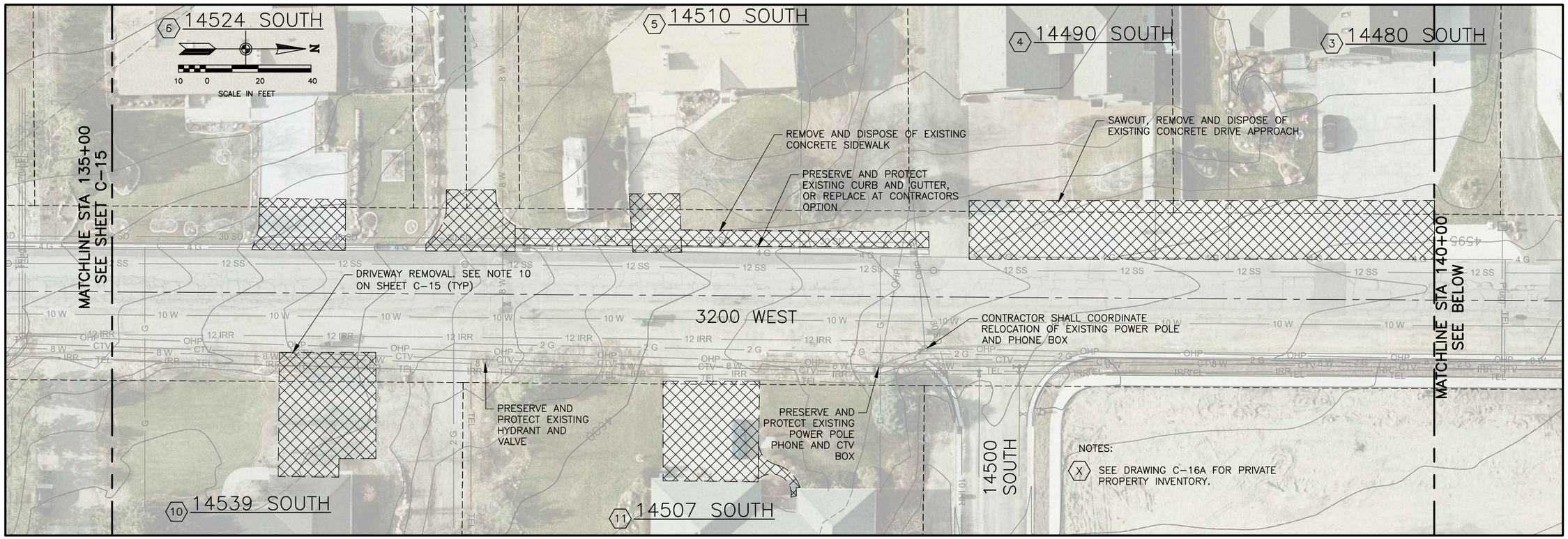

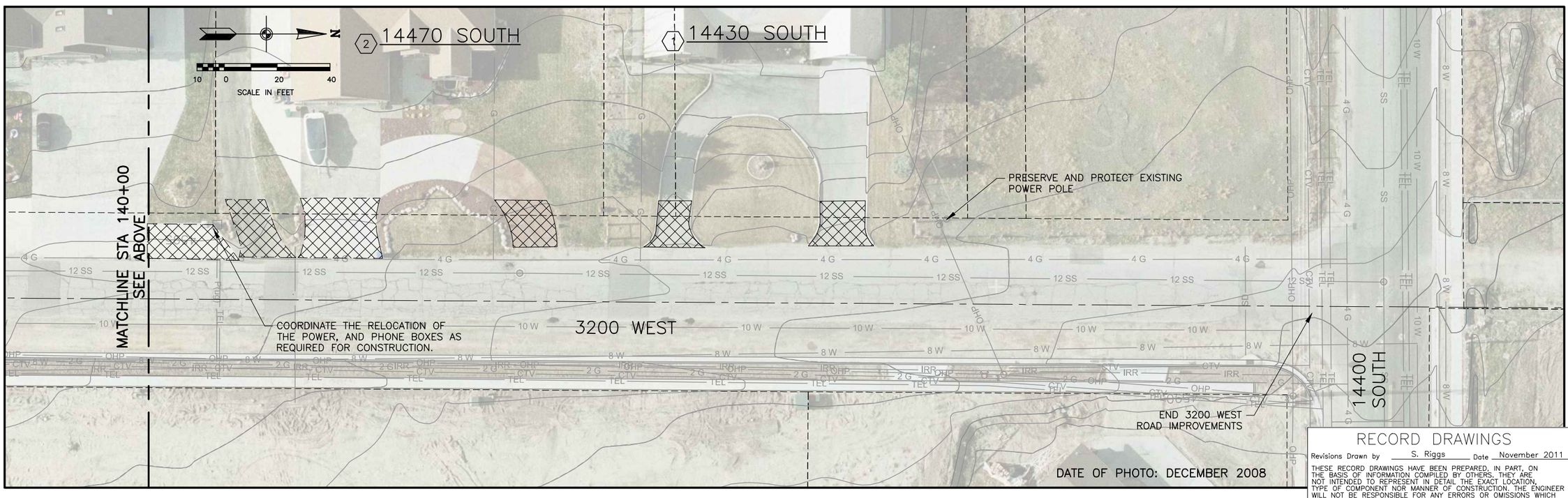

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

3200 WEST PRIVATE IMPROVEMENTS AND DEMOLITION PLAN-2

DESIGN T. OLSEN DESIGN
DRAWN B. ABEL DRAWN
REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. C-16

SHEET 38 OF 110

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SCHEDULE OF PRIVATE IMPROVEMENTS, LOTS 1 THROUGH 6

LOT NO.	ADDRESS	ITEM	REPLACE OR DISPOSE (1, 2)	NOTES
1	14430 SOUTH	IRRIGATION BOX	REPLACE	REPLACE SPRINKLER BOX AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		CONCRETE CURBING	REPLACE	2 LOCATIONS ALONG DRIVEWAY. SAWCUT, REMOVE AND DISPOSE OF EXISTING CURBING. RECONSTRUCT NEW CURBING ADJACENT TO DRIVEWAYS AS SHOWN ON DWG. C-25.
		WIRE FENCE	REPLACE	NORTH SIDE OF PROPERTY. NEW FENCE SHALL BE INSTALLED PRIOR TO REMOVAL OF EXISTING FENCE AND CONSTRUCTION OF SIDEWALK AND CURB & GUTTER.
		RAILROAD TIE & WIRE FENCE	REPLACE	SOUTH SIDE OF PROPERTY. REMOVE AND REPLACE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		WATER METER	REPLACE	RELOCATE WATER WATER AS REQUIRED FOR CONSTRUCTION. RAISE METER TO MATCH FINAL GRADE.
		MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION. LARGE ROCKS AROUND EXISTING MAILBOX WILL NEED TO BE REPLACED AFTER RELOCATION.
2	14470 SOUTH	ROCK PLANTER	DISPOSE	REMOVE AND DISPOSE OF EXISTING ROCK PLANTERS ADJACENT TO DRIVEWAY AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLER AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
		WATER METER	REPLACE	RELOCATE WATER METER AS REQUIRED FOR CONSTRUCTION. RAISE METER TO MATCH FINAL GRADE.
3	14480 SOUTH	MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
		WATER METER	REPLACE	RELOCATE WATER METER AS REQUIRED FOR CONSTRUCTION. RAISE METER TO MATCH FINAL GRADE.
		CONCRETE APRON	REPLACE	SAWCUT, REMOVE AND DISPOSE OF EXISTING CONCRETE APRON. REPLACE CONCRETE APRON WITH SOD.
4	14490 SOUTH	MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
		CONCRETE APRON	DISPOSE	SAWCUT, REMOVE AND DISPOSE OF EXISTING CONCRETE APRON. REPLACE CONCRETE APRON WITH SOD.
		WATER METER	REPLACE	RELOCATE WATER METER AS REQUIRED FOR CONSTRUCTION. RAISE METER TO MATCH FINAL GRADE.
5	14510 SOUTH	BLOCK WALL	DISPOSE	REMOVE AND DISPOSE OF EXISTING BLOCK WALL. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL.
		LARGE ROCKS	DISPOSE	REMOVE AND DISPOSE OF LARGE ROCKS AS REQUIRED FOR CONSTRUCTION.
		TREE	DISPOSE	REMOVE AND DISPOSE OF TREE AS REQUIRED FOR CONSTRUCTION.
		BUSHES	DISPOSE	REMOVE AND DISPOSE OF BUSHES AS REQUIRED FOR CONSTRUCTION.
		BRICK FENCE	REPLACE	SOUTH SIDE OF DRIVEWAY. REMOVE AND REPLACE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL
		CONCRETE SIDEWALK	REPLACE	REMOVE AND DISPOSE OF EXISTING CONCRETE SIDEWALK AS REQUIRED FOR CONSTRUCTION.
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
		TREE	DISPOSE	REMOVE AND DISPOSE OF TREE AS REQUIRED FOR CONSTRUCTION.
		IRRIGATION BOX	REPLACE	REPLACE IRRIGATION BOX AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		ROCK LANDSCAPING	DISPOSE	2 LOCATIONS. REMOVE AND DISPOSE OF EXISTING ROCK LANDSCAPING. COORDINATE WITH PROPERTY OWNERS PRIOR TO REMOVAL.
		MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
6	14524 SOUTH	LANDSCAPING PLANTERS	DISPOSE	7 LOCATIONS. REMOVE AND DISPOSE OF EXISTING LANDSCAPING PLANTERS. COORDINATE WITH PROPERTY OWNERS PRIOR TO REMOVAL
		CONCRETE CURBING	REPLACE	SAWCUT, REMOVE AND DISPOSE OF EXISTING CURBING. RECONSTRUCT NEW CURBING AS ADJACENT TO DRIVEWAYS AS SHOWN ON DWG. C-24.
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		ROCK WALL	REPLACE	REMOVE AND REPLACE EXISTING ROCK WALL ADJACENT TO CONCRETE DRIVEWAY AS REQUIRED FOR CONSTRUCTION. SEE DETAIL C/2023 FOR ROCK WALL.
		MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
		FENCE	REPLACE	SOUTH SIDE OF PROPERTY. REMOVE AND REPLACE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL

SCHEDULE OF PRIVATE IMPROVEMENTS, LOTS 7 THROUGH 11

LOT NO.	ADDRESS	ITEM	REPLACE OR DISPOSE (1, 2)	NOTES
7	14564 SOUTH	LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		TREE	DISPOSE	REMOVE AND DISPOSE OF TREE AS REQUIRED FOR CONSTRUCTION.
8	14625 SOUTH	TREES AND LARGE ROCKS	DISPOSE	REMOVE AND DISPOSE OF TREES AND LARGE ROCKS AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL.
		VINYL FENCE	REPLACE	SOUTH SIDE OF PROPERTY. REMOVE AND REPLACE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL
		ROCK WALL	REPLACE	SOUTH AND NORTH SIDE OF PROPERTY. REMOVE AND REPLACE EXISTING ROCK WALL ADJACENT TO CONCRETE DRIVEWAY AS REQUIRED FOR CONSTRUCTION. SEE DETAIL C/2023 FOR ROCK WALL.
		WATER METER	REPLACE	RELOCATE WATER METER AS REQUIRED FOR CONSTRUCTION. RAISE METER TO MATCH FINAL GRADE.
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		SHRUBS	DISPOSE	REMOVE AND DISPOSE OF EXISTING SHRUBS AS REQUIRED FOR CONSTRUCTION.
		PINE TREE	DISPOSE	REMOVE AND DISPOSE OF EXISTING TREE AS REQUIRED FOR CONSTRUCTION.
9	14569 SOUTH	IRON PIPE FENCE	REPLACE	SOUTH SIDE OF PROPERTY. REMOVE AND REPLACE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		MAILBOXES	REPLACE	2 LOCATIONS. RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
		BLOCK WALL	DISPOSE	REMOVE AND DISPOSE OF EXISTING BLOCK WALL. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL.
10	14539 SOUTH	METAL PIPE GATE	PROTECT	PRESERVE AND PROTECT EXISTING METAL GATE.
		IRON PIPE FENCE	REPLACE	SOUTH SIDE OF PROPERTY. REMOVE AND REPLACE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL
		PINE TREE	DISPOSE	REMOVE AND DISPOSE OF EXISTING TREE AS REQUIRED FOR CONSTRUCTION.
		IRRIGATION BOX	REPLACE	REPLACE IRRIGATION BOX AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		TREES	DISPOSE	2 LOCATIONS. REMOVE AND DISPOSE OF EXISTING TREE AS REQUIRED FOR CONSTRUCTION.
		CONCRETE CURBING	DISPOSE	REMOVE AND DISPOSE OF EXISTING CONCRETE LANDSCAPE CURBING AS REQUIRED FOR CONSTRUCTION.
		ROCK WALL	REPLACE	FRONT OF PROPERTY. REMOVE AND REPLACE EXISTING ROCK WALL AS REQUIRED FOR CONSTRUCTION. SEE DETAIL C/2023 FOR ROCK WALL.
		MAILBOX	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
11	14507 SOUTH	IRON PIPE FENCE	REPLACE	SOUTH SIDE OF PROPERTY. REMOVE AND REPLACE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL
		PINE TREES	DISPOSE	SOUTH SIDE OF PROPERTY. REMOVE AND DISPOSE OF TREES AS REQUIRED FOR CONSTRUCTION.
		LANDSCAPING/SPRINKLERS	REPLACE	REPLACE LANDSCAPING/SPRINKLERS AS NOTED IN THE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENTS ON DWG. C-15.
		MAILBOXES	REPLACE	RELOCATE EXISTING MAILBOX AS NECESSARY FOR CONSTRUCTION.
		PINE TREES	DISPOSE	NORTH SIDE OF PROPERTY. REMOVE AND DISPOSE OF TREES AS REQUIRED FOR CONSTRUCTION.

NOTES:

1. PROPERTY OWNER HAS BEEN GIVEN THE OPTIONS TO SALVAGE ITEMS NOTED FOR DISPOSAL PRIOR TO CONSTRUCTION OF THE PROJECT. CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL OF ANY ITEM. CONTRACTOR SHALL DISPOSE OF ALL ITEMS LISTED IN ACCORDANCE WITH STATE REGULATIONS.
2. ITEMS NOTED TO REPLACE SHALL BE REMOVED AS REQUIRED FOR CONSTRUCTION OF IMPROVEMENTS AND SHALL BE REPLACED TO EXISTING OR BETTER CONDITIONS. COORDINATE WITH PRIVATE PROPERTY OWNER PRIOR TO CONSTRUCTION.
3. REFERENCE GENERAL NOTES FOR RESIDENTAIL IMPROVEMENT ON DWG. C-15 FOR CONSTRUCTION ON PRIVATE PROPERTIES.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

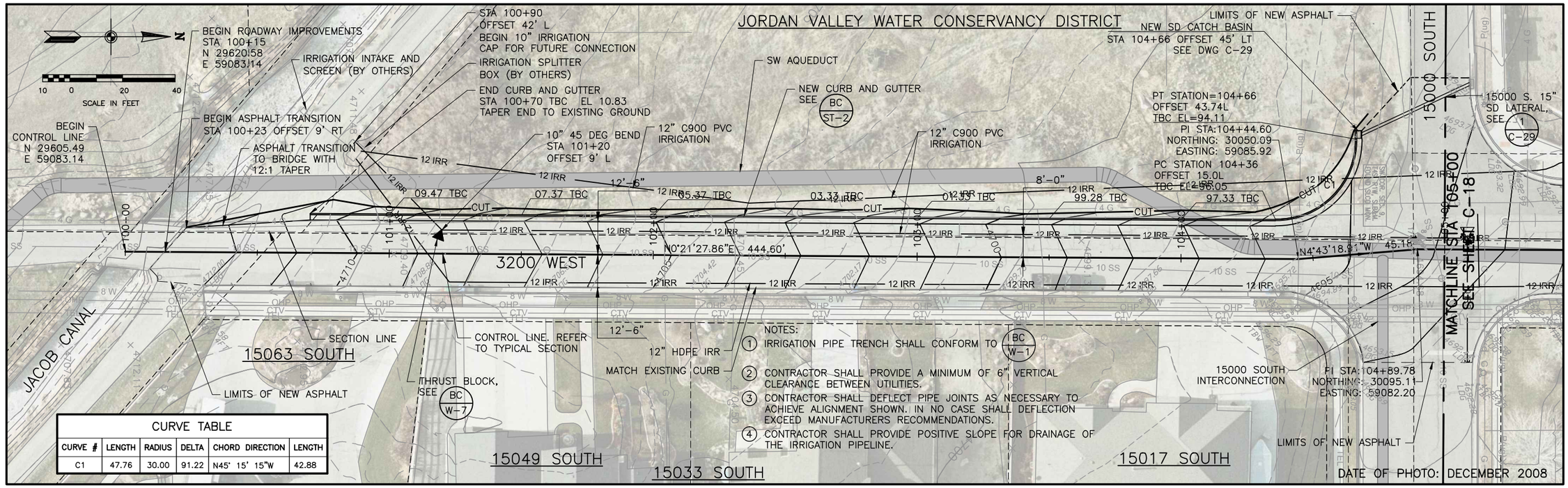
DESIGN T. OLSEN
DESIGN
DRAWN B. ABEL
REVIEW K. BAGLEY
CHECKED
APPROVED J. LUETTINGER

CIVIL
SCHEDULE OF PRIVATE IMPROVEMENTS

PROJECT NUMBER 010-08-03
DATE: FEBRUARY 2010

DRAWING NO. C-16A
SHEET 39 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C16A.dwg Nov30,2011 - 9:18am



CURVE TABLE					
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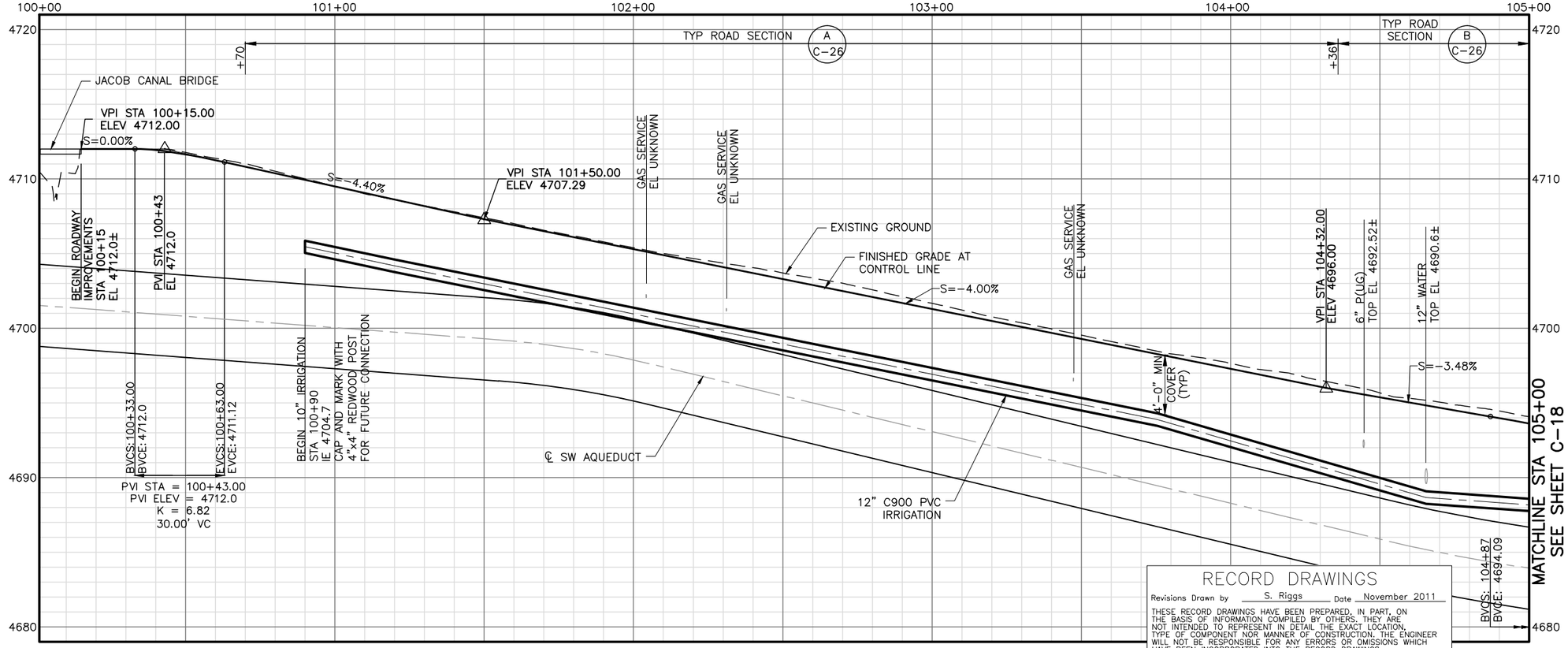

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DESIGN
DRAWN R.D. / B.A.
REVIEW K. BAGLEY CHECKED
APPROVED J. LUETTINGER

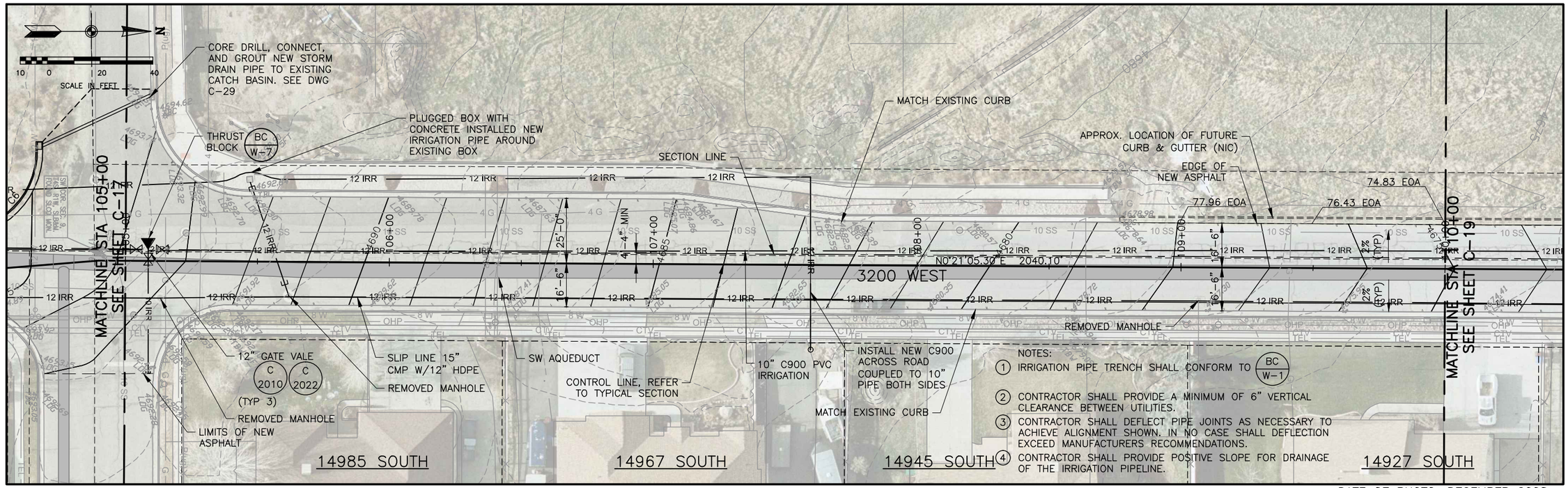
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

PLAN AND PROFILE – 1
STA 100+00 TO STA 105+00

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-17
SHEET 40 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C17.dwg Dec27,2011 – 3:30pm



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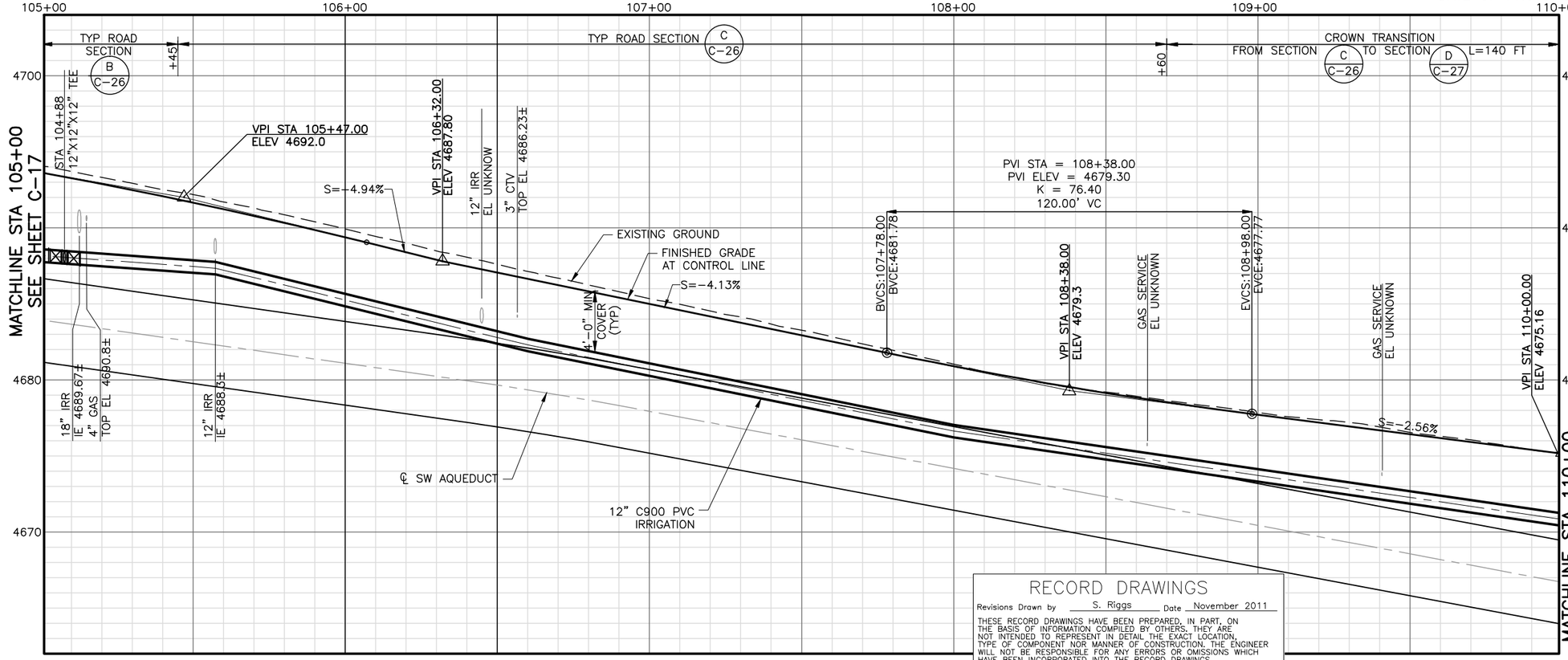

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DESIGN
DRAWN R.D. / B.A.

REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

PLAN AND PROFILE - 2
STA 105+00 TO STA 110+00

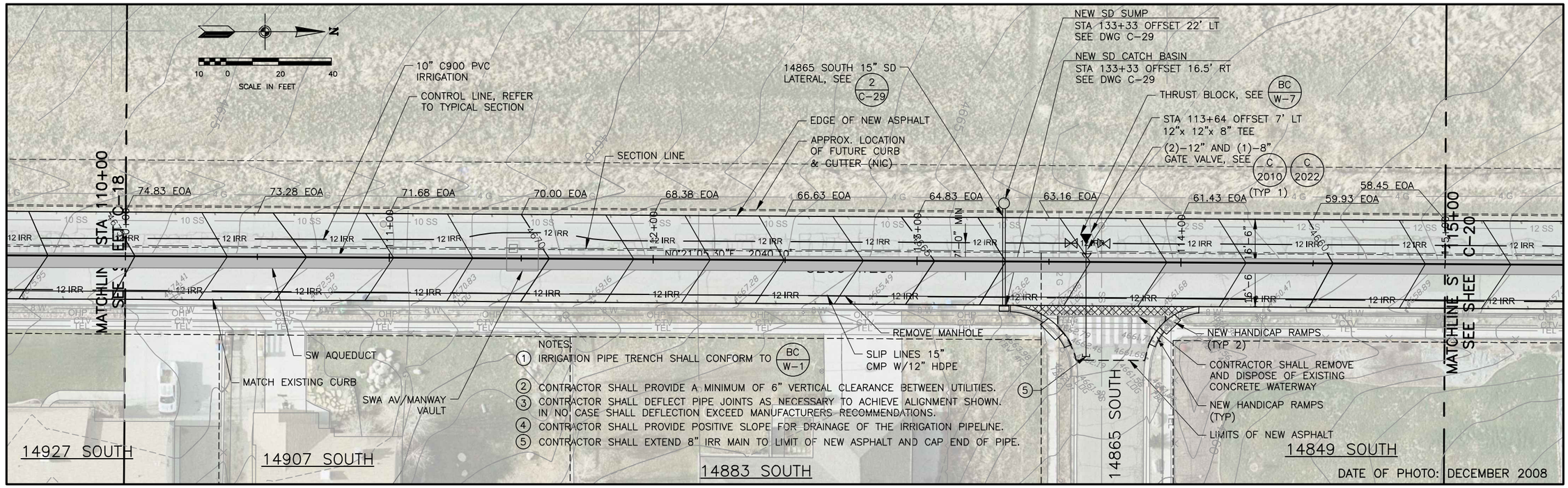
DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

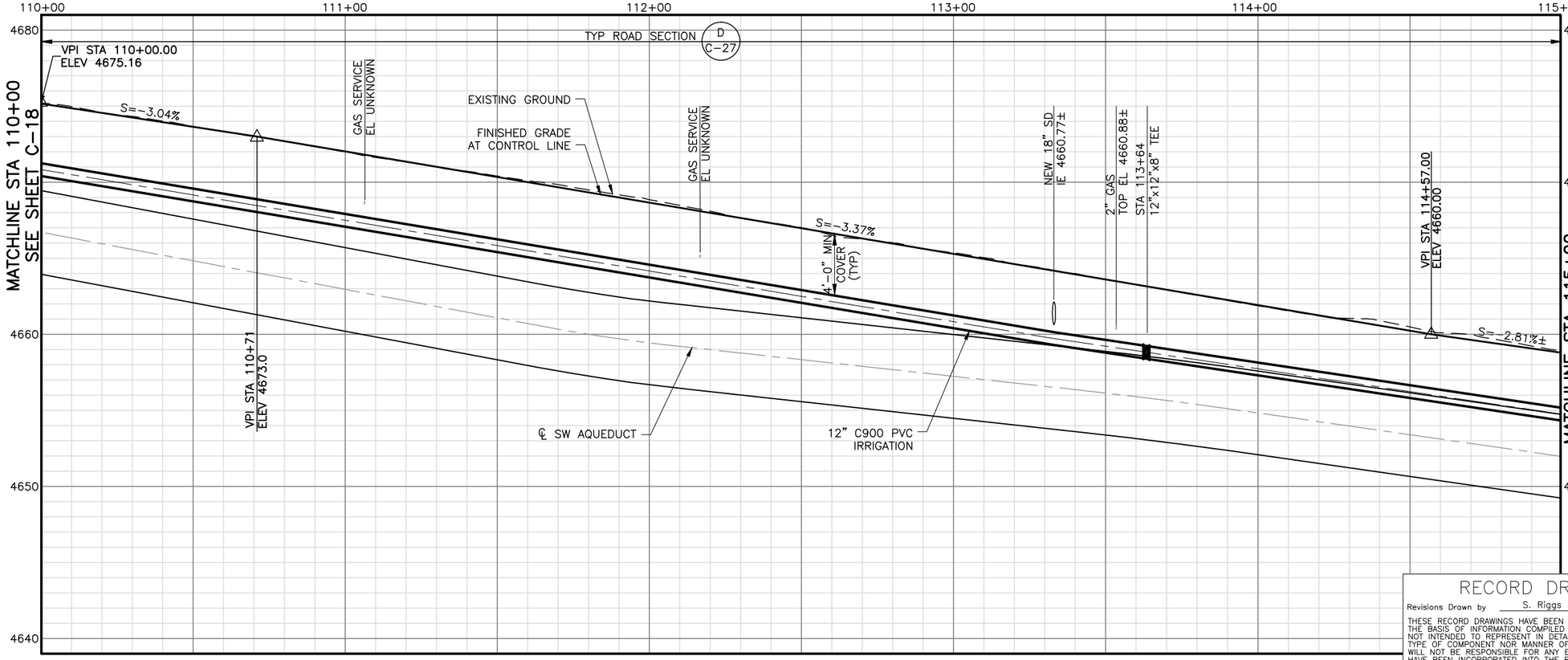
DRAWING NO. C-18

SHEET 41 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C18.dwg Dec27,2011 - 4:04pm



NOTES:
1. IRRIGATION PIPE TRENCH SHALL CONFORM TO BC W-1
2. CONTRACTOR SHALL PROVIDE A MINIMUM OF 6" VERTICAL CLEARANCE BETWEEN UTILITIES.
3. CONTRACTOR SHALL DEFLECT PIPE JOINTS AS NECESSARY TO ACHIEVE ALIGNMENT SHOWN. IN NO CASE SHALL DEFLECTION EXCEED MANUFACTURERS RECOMMENDATIONS.
4. CONTRACTOR SHALL PROVIDE POSITIVE SLOPE FOR DRAINAGE OF THE IRRIGATION PIPELINE.
5. CONTRACTOR SHALL EXTEND 8" IRR MAIN TO LIMIT OF NEW ASPHALT AND CAP END OF PIPE.



RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DESIGN
DRAWN R. DARGER

REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

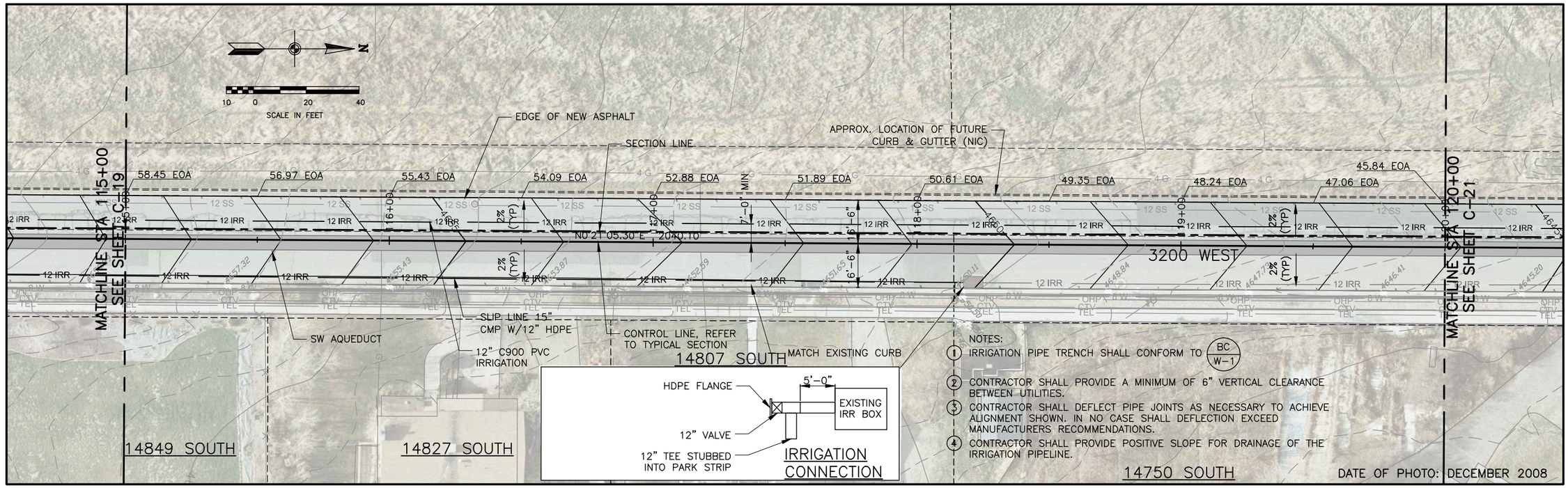
CIVIL

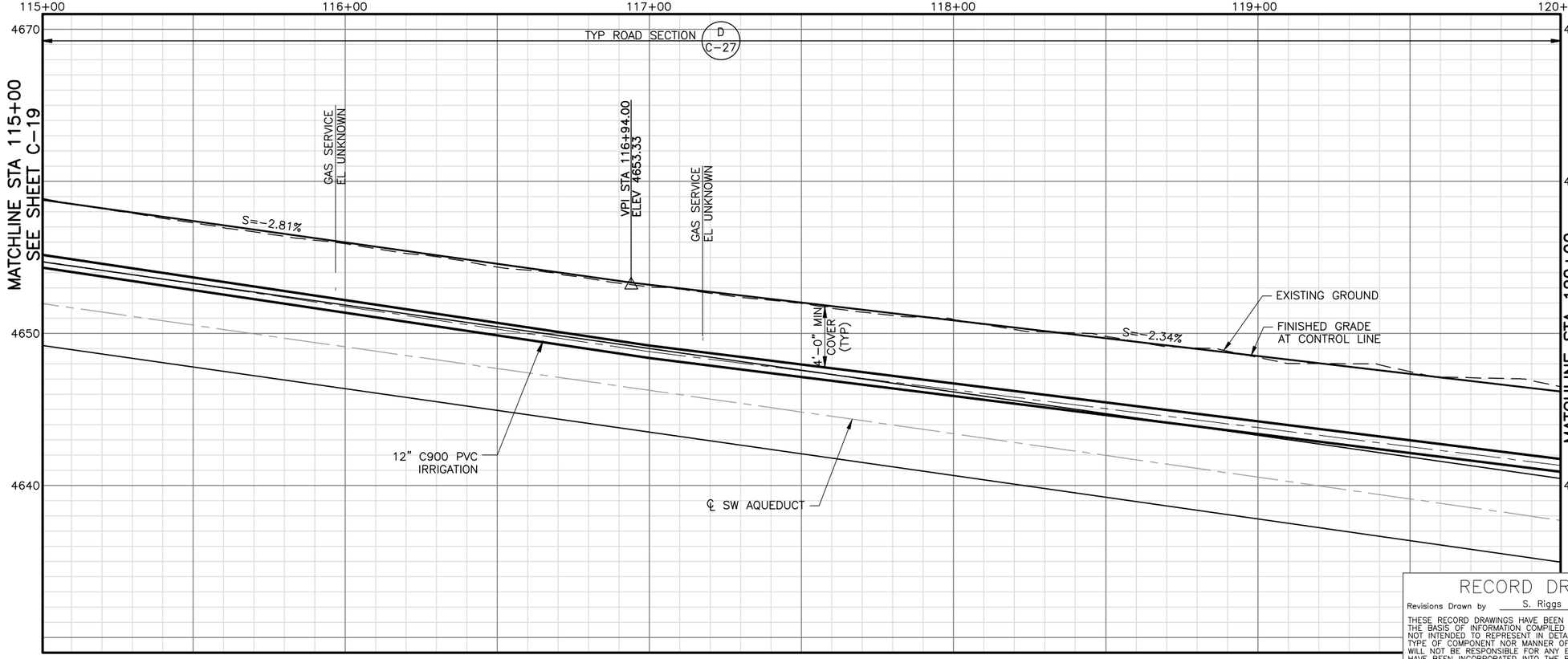
PLAN AND PROFILE - 3
STA 110+00 TO STA 115+00

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-19
SHEET 42 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C19.dwg Dec27,2011 - 4:15pm





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DESIGN
DRAWN R.D. / B.A.

REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

PLAN AND PROFILE - 4
STA 115+00 TO STA 120+00

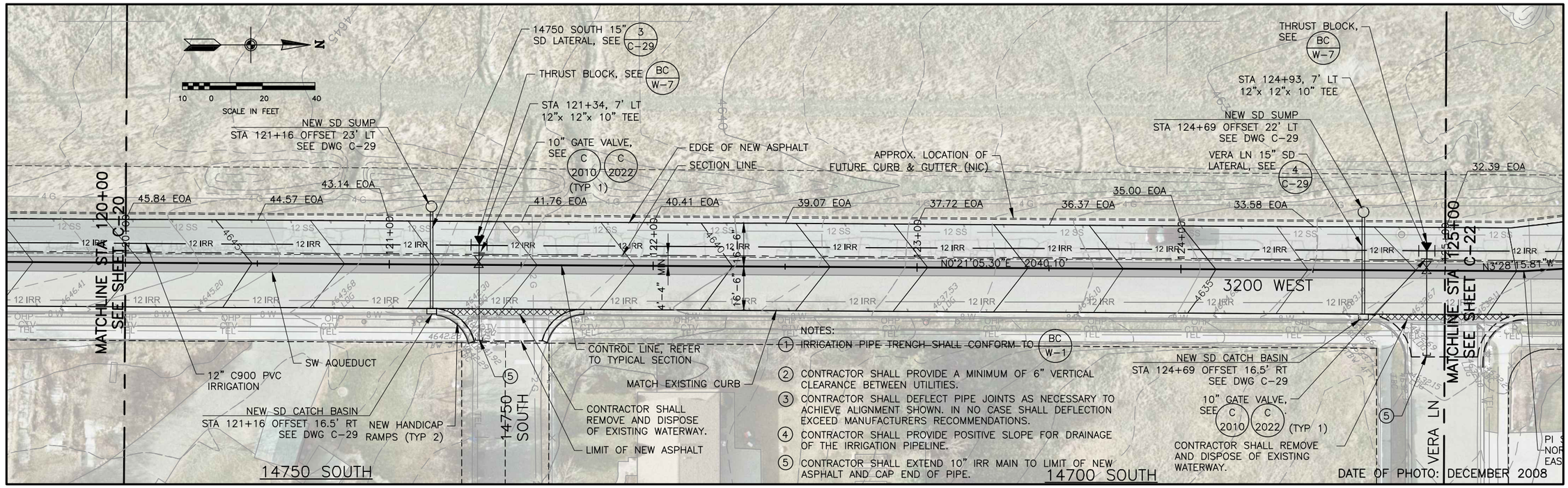
DATE: FEBRUARY 2010

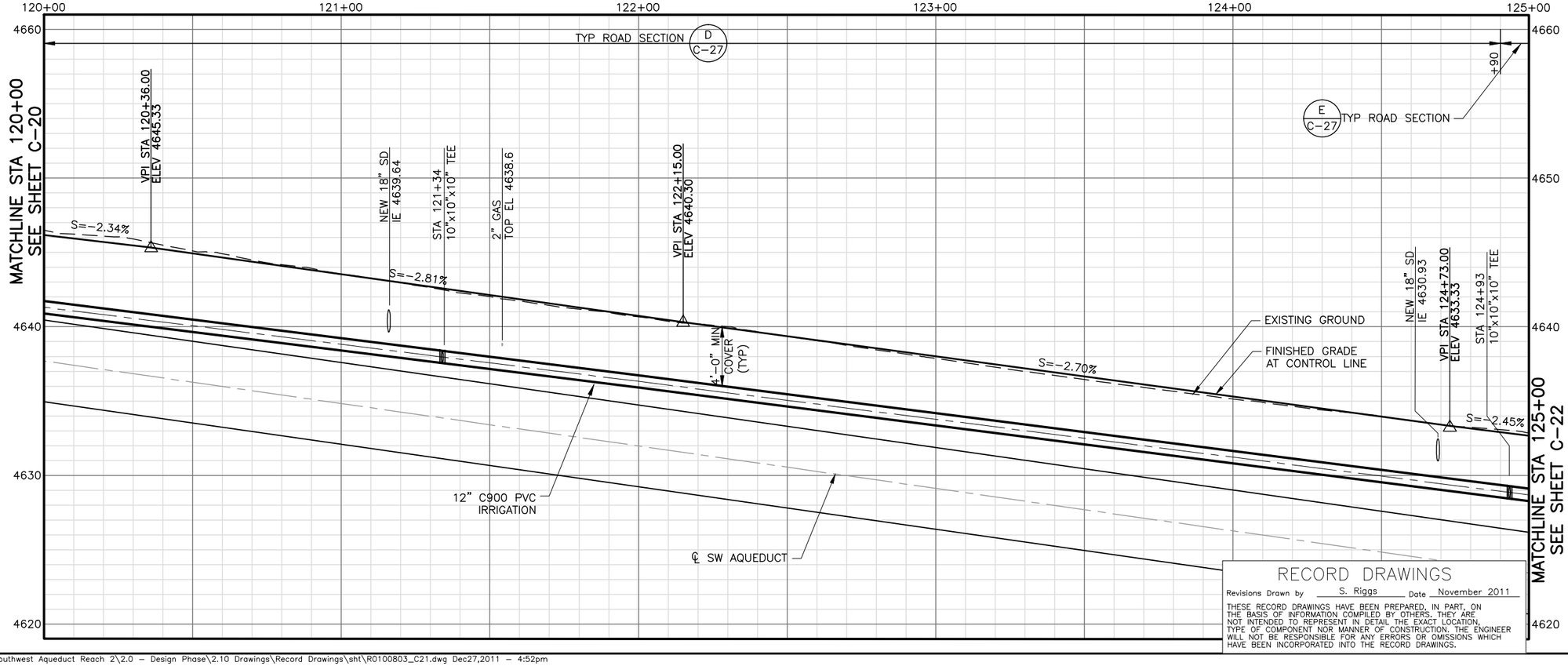
PROJECT NUMBER 010-08-03

DRAWING NO. C-20

SHEET 43 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C20.dwg Dec27,2011 - 4:40pm





Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DRAWN R. DARGER
REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

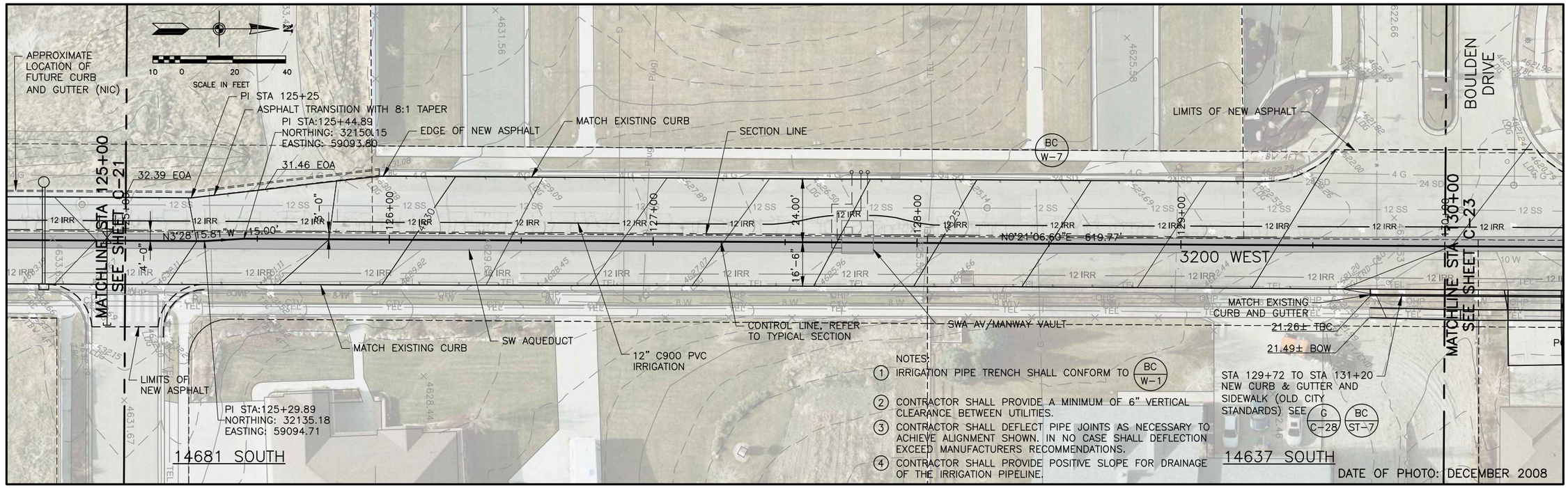
CIVIL

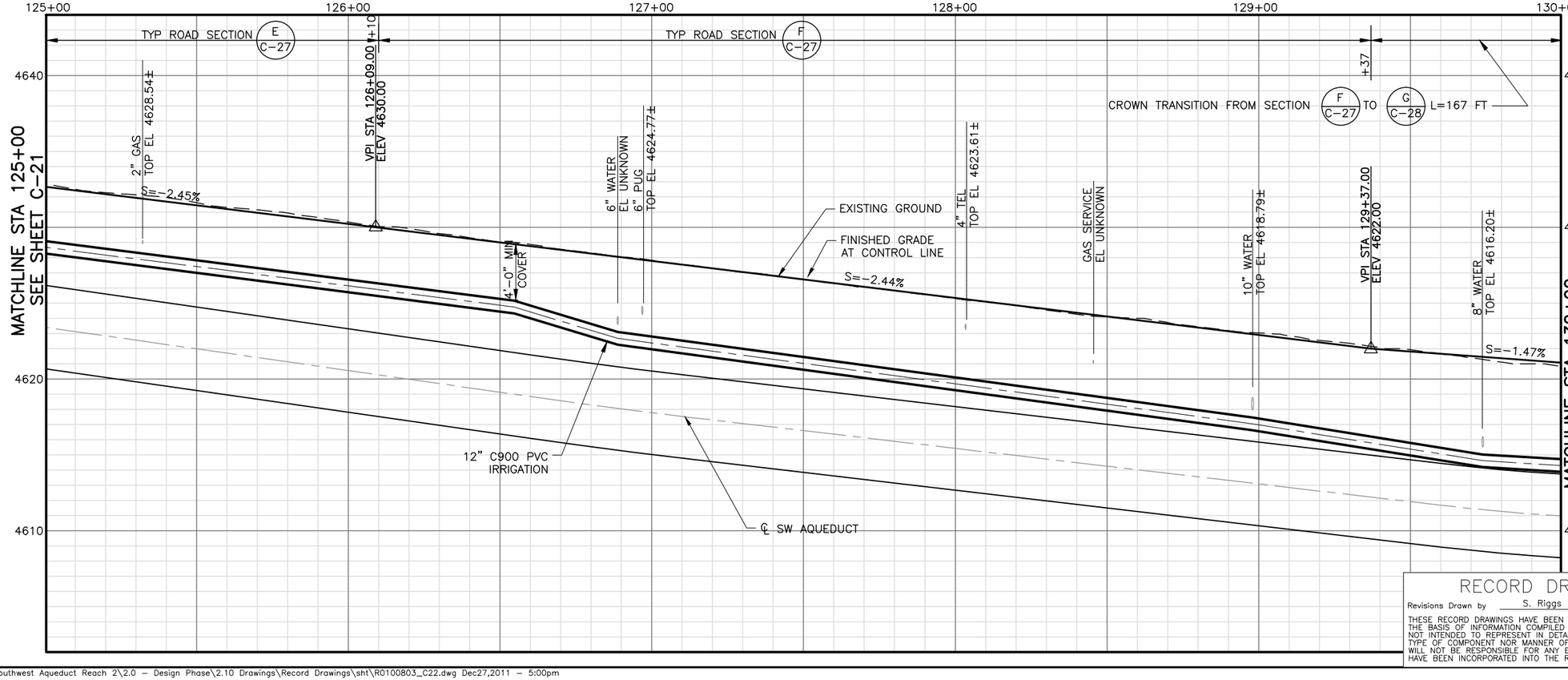
PLAN AND PROFILE – 5
STA 120+00 TO STA 125+00

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-21
SHEET 44 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C21.dwg Dec27,2011 – 4:52pm





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

REVIEW CHECKED K. BAGLEY APPROVED J. LUETTINGER

DESIGN DESIGN T. OLSEN DRAWN R. DARGER

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

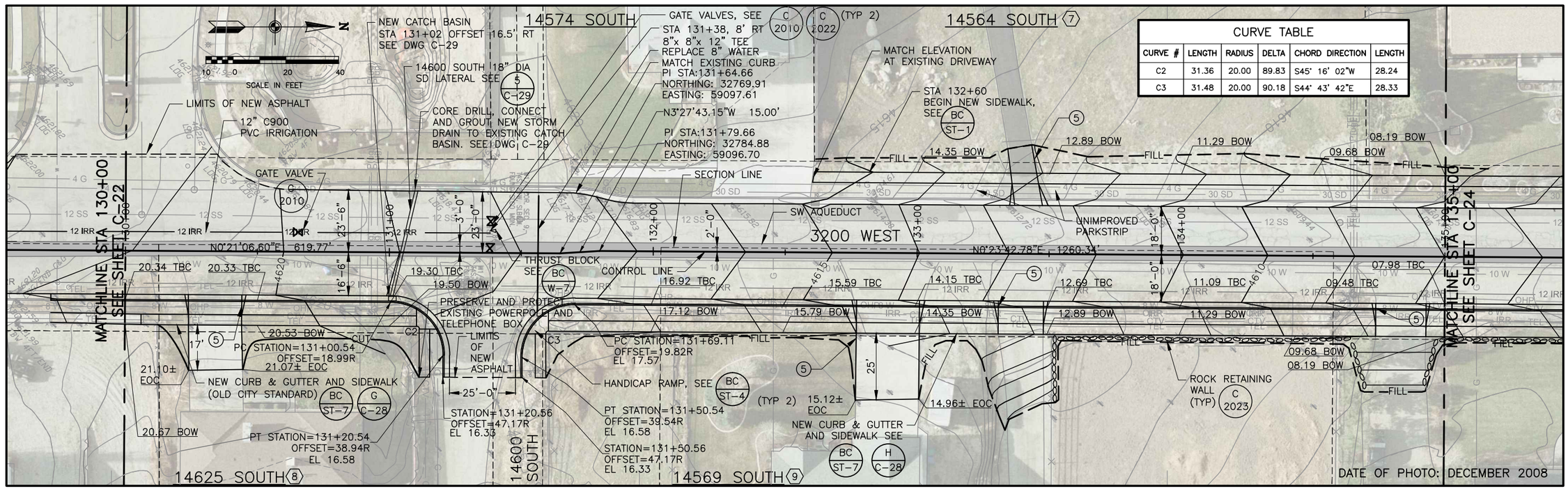
PLAN AND PROFILE – 6 STA 125+00 TO STA 130+00

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. C-22

SHEET 45 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C22.dwg Dec27,2011 – 5:00pm



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	LENGTH
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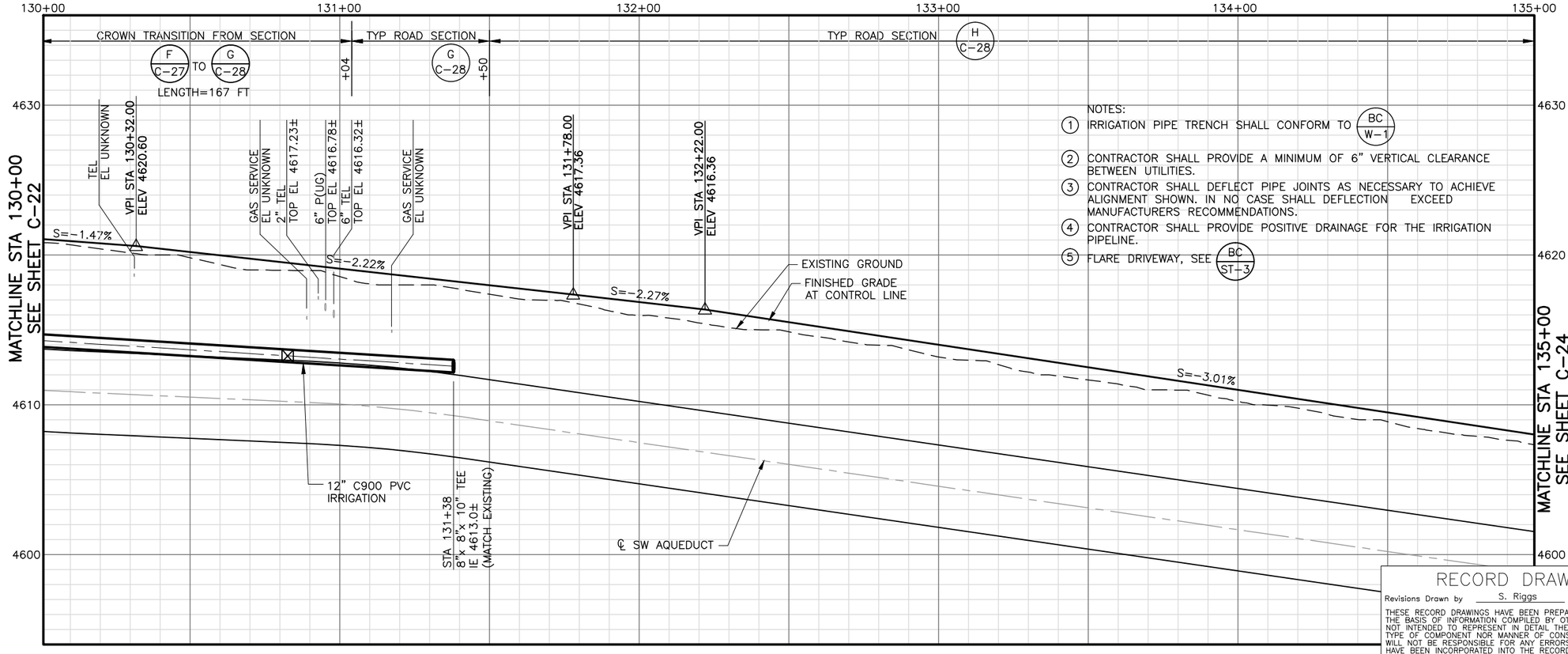
C3	31.48	20.00	90.18	S44° 43' 42"E	28.33



RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DESIGN
DRAWN R. DARGER DRAWN
REVIEW K. BAGLEY CHECKED
J. LUETTINGER APPROVED

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CWL

PLAN AND PROFILE – 7
STA 130+00 TO STA 135+00

DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. C-23

SHEET 46 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C23.dwg Dec28,2011 – 8:32am

CURVE TABLE					
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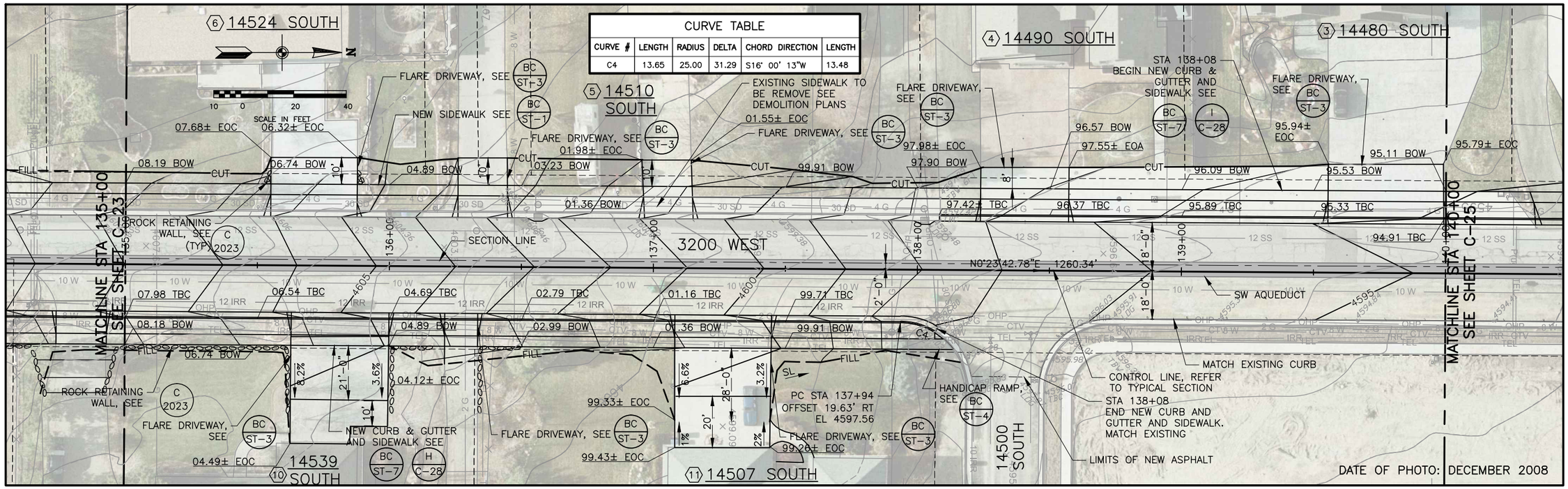
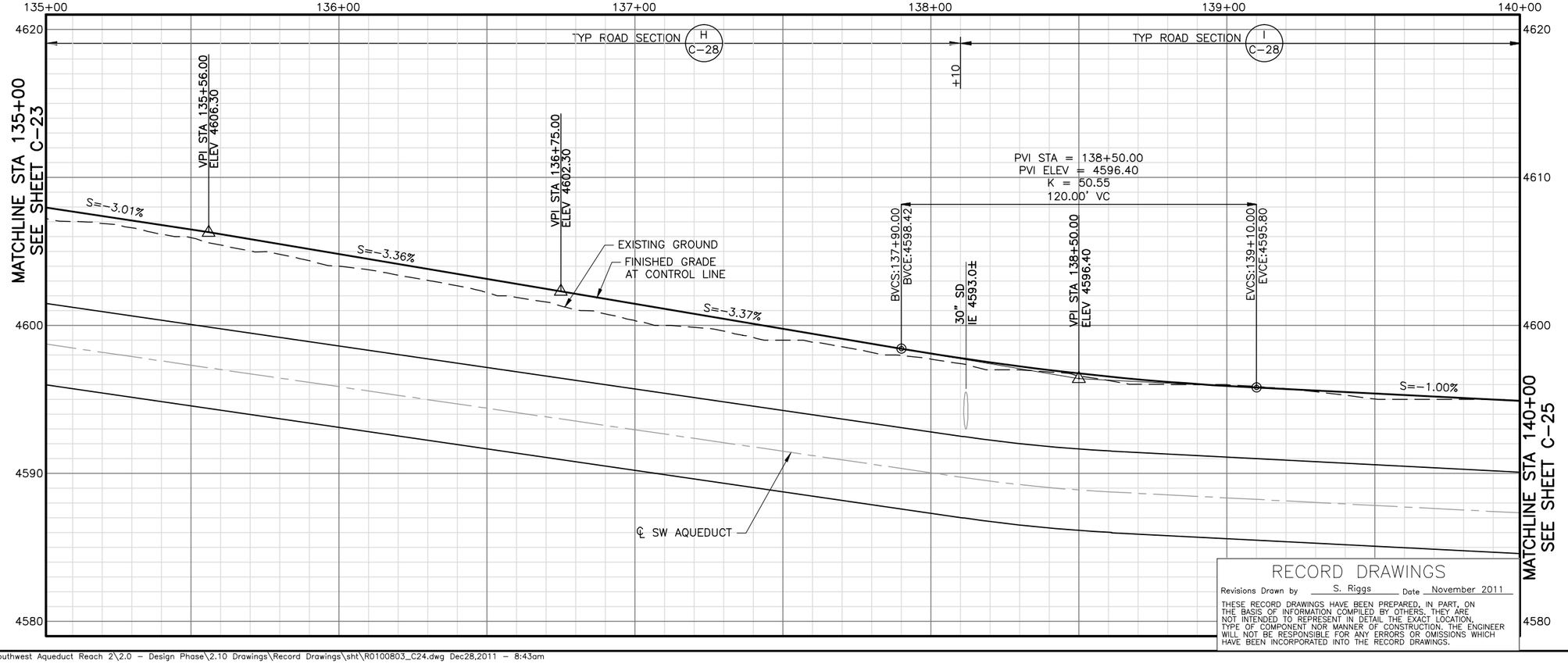
C4	13.65	25.00	31.29	S16° 00' 13"W	13.48





RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DESIGN
DRAWN R. DARGER
REVIEW K. BAGLEY CHECKED
J. LUETTINGER APPROVED

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

PLAN AND PROFILE – 8
STA 135+00 TO STA 140+00

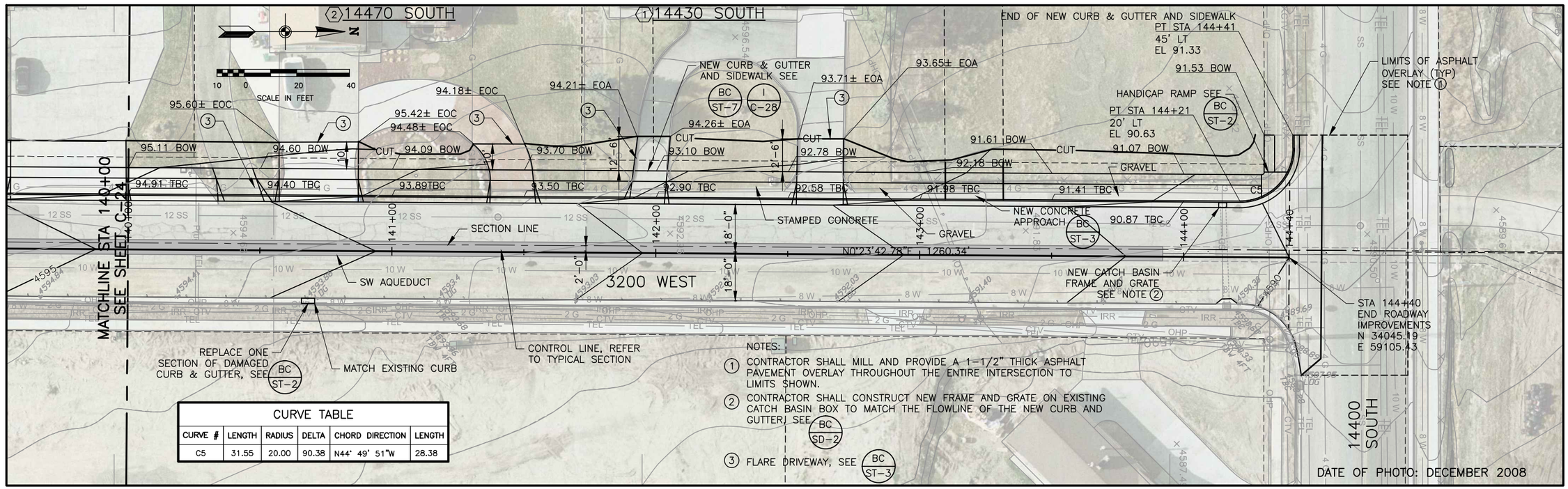
DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. C-24

SHEET 47 OF 110

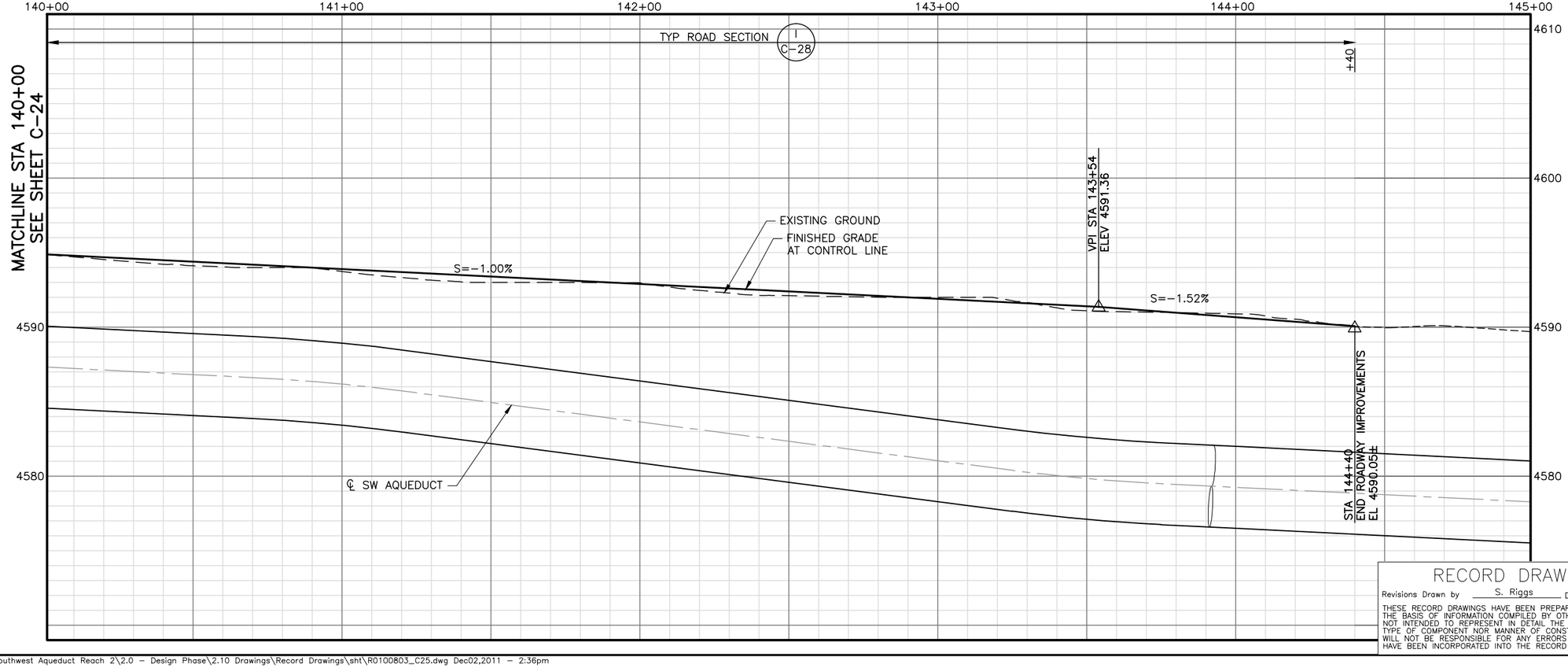
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C24.dwg Dec28,2011 – 8:43am



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	LENGTH
C5	31.55	20.00	90.38	N44° 49' 51"W	28.38

NOTES:

1. CONTRACTOR SHALL MILL AND PROVIDE A 1-1/2" THICK ASPHALT PAVEMENT OVERLAY THROUGHOUT THE ENTIRE INTERSECTION TO LIMITS SHOWN.
2. CONTRACTOR SHALL CONSTRUCT NEW FRAME AND GRATE ON EXISTING CATCH BASIN BOX TO MATCH THE FLOWLINE OF THE NEW CURB AND GUTTER, SEE BC SD-2
3. FLARE DRIVEWAY, SEE BC ST-3



RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DRAWN R. D. /B. A.
REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

PLAN AND PROFILE - 9
STA 140+00 TO STA 144+40

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-25
SHEET 48 OF 110

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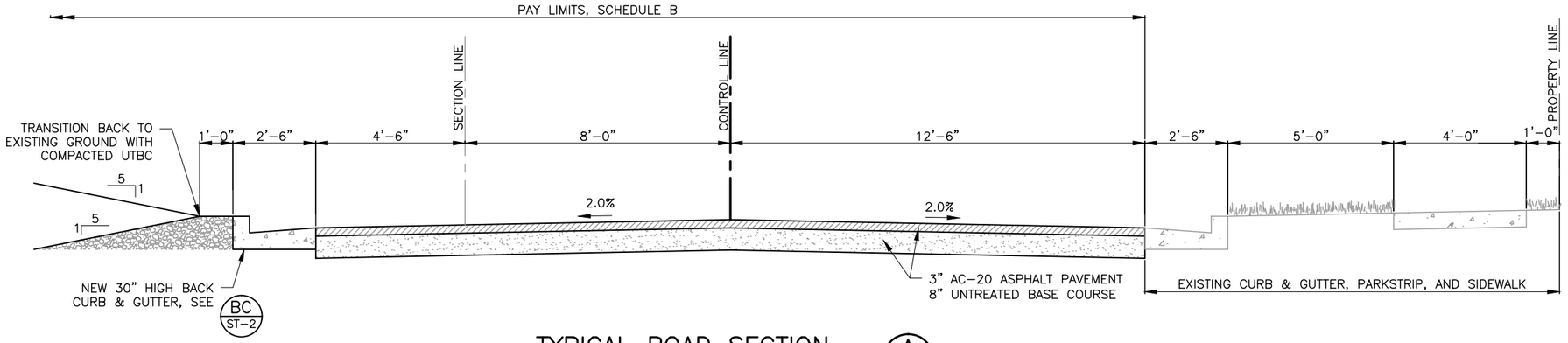
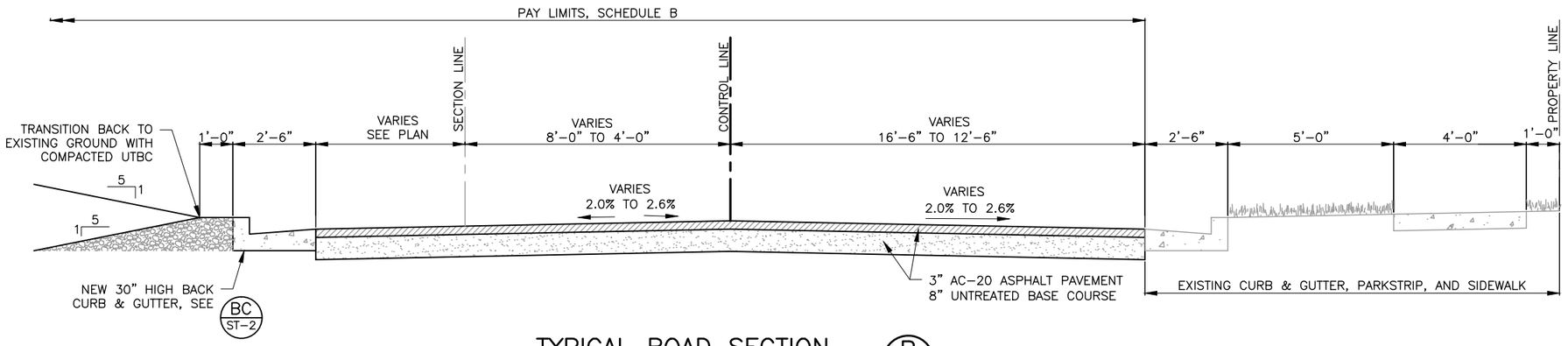


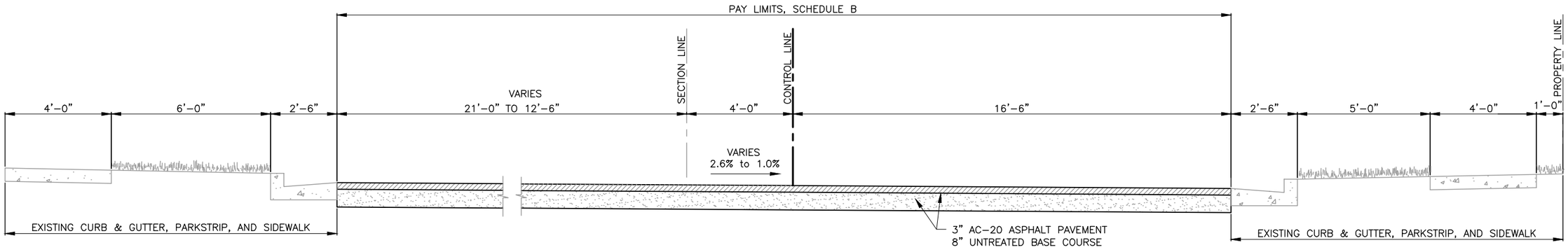
TYPICAL ROAD SECTION A
SCALE: 1/2" = 1'–0"
C–17

STA 100+70 TO STA 104+36
DESIGN SPEED 35 MPH



TYPICAL ROAD SECTION B
SCALE: 1/2" = 1'–0"
C–17, 18

STA 104+36 TO STA 105+45
DESIGN SPEED 35 MPH



TYPICAL ROAD SECTION C
SCALE: 1/2" = 1'–0"
C–18

STA 105+45 TO STA 108+60
DESIGN SPEED 35 MPH

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN R. D. / B. A.
REVIEW
CHECKED K. BAGLEY
APPROVED J. LUETTINGER

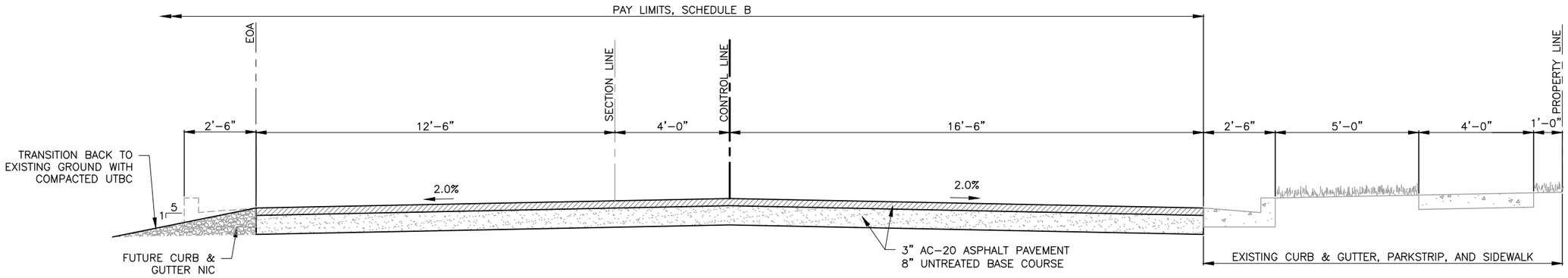
CIVIL

TYPICAL ROAD SECTIONS

PROJECT NUMBER 010–08–03
DATE: FEBRUARY 2010

DRAWING NO. C–26
SHEET 49 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_C26.dwg Nov15,2011 – 5:14pm

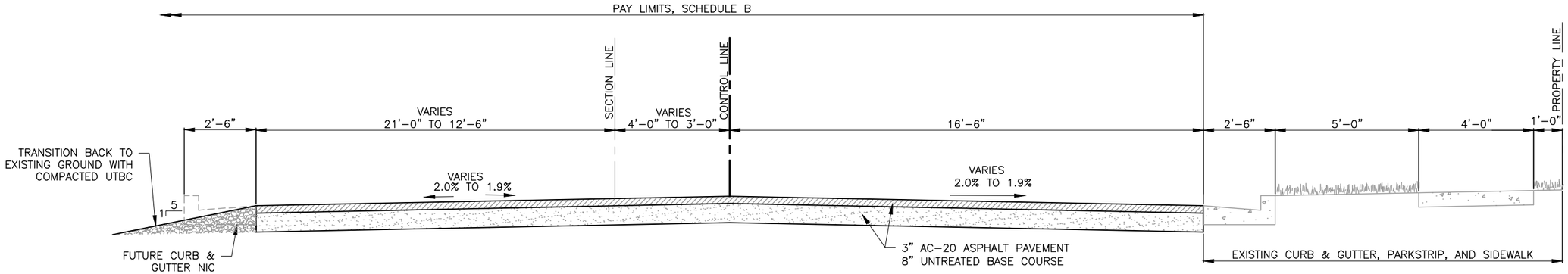


TYPICAL ROAD SECTION D

SCALE: 1/2" = 1'–0"

C–19, 20, 21

STA 110+00 TO STA 124+90
DESIGN SPEED 35 MPH

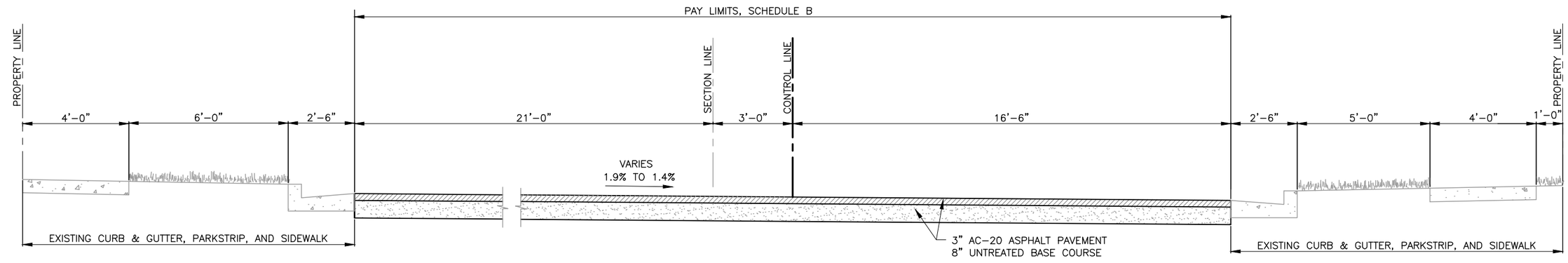


TYPICAL ROAD SECTION E

SCALE: 1/2" = 1'–0"

C–21, 22

STA 124+90 TO STA 126+10
DESIGN SPEED 35 MPH



TYPICAL ROAD SECTION F

SCALE: 1/2" = 1'–0"

C–22

STA 126+10 TO STA 129+37
DESIGN SPEED 35 MPH

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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REVISIONS

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED K. BAGLEY APPROVED J. LUETTINGER

DESIGN T. OLSEN DESIGN R. DARGER

CIVIL

TYPICAL ROAD SECTIONS

DATE: FEBRUARY 2010

PROJECT NUMBER 010–08–03

DRAWING NO. C–27

SHEET 50 OF 110

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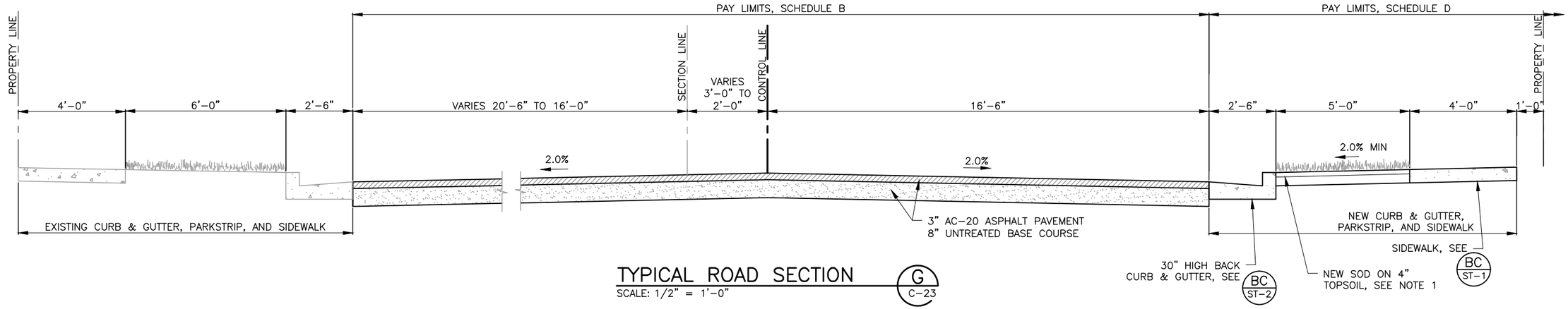
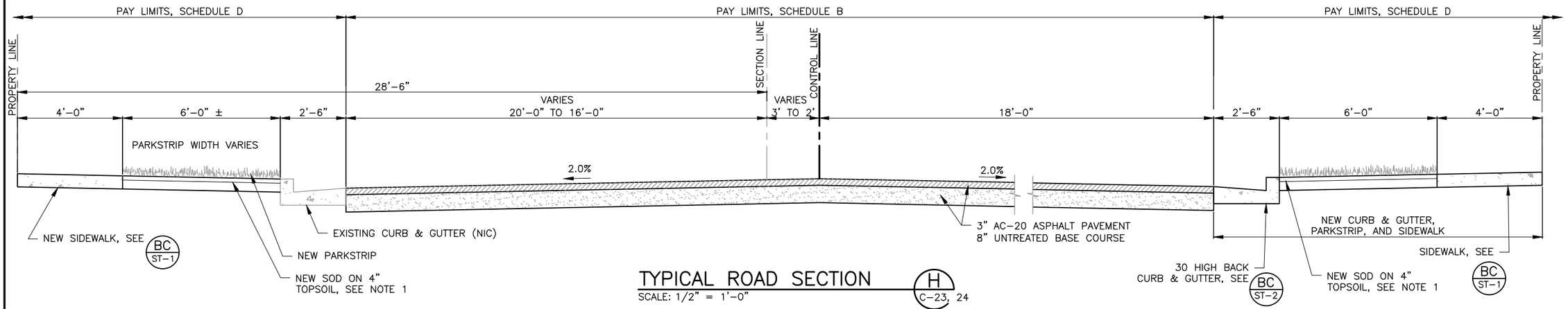


TYPICAL ROAD SECTION G C–23

SCALE: 1/2" = 1'–0"

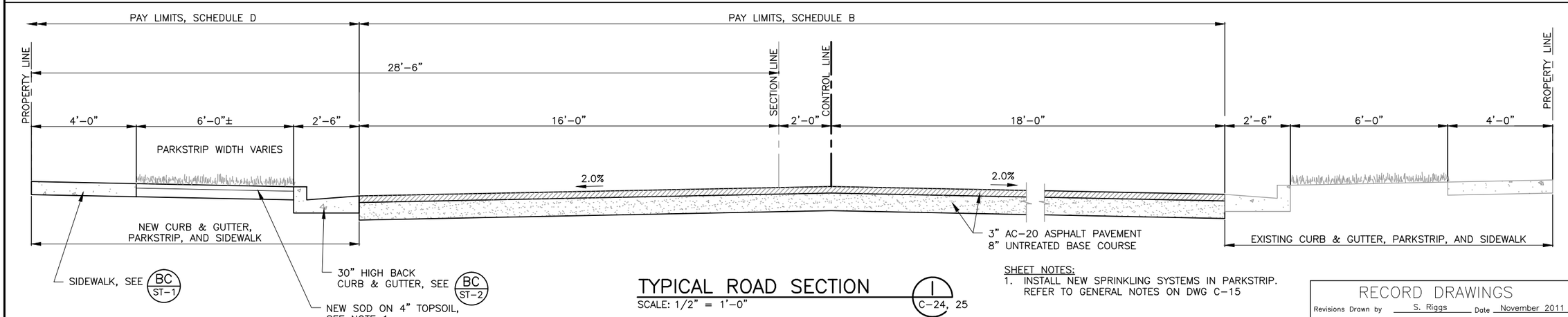
STA 131+04 TO STA 131+50
DESIGN SPEED 35 MPH



TYPICAL ROAD SECTION H C–23, 24

SCALE: 1/2" = 1'–0"

STA 131+50 TO STA 138+10
DESIGN SPEED 35 MPH



TYPICAL ROAD SECTION I C–24, 25

SCALE: 1/2" = 1'–0"

STA 138+10 TO STA 144+40
DESIGN SPEED 35 MPH

SHEET NOTES:
1. INSTALL NEW SPRINKLING SYSTEMS IN PARKSTRIP. REFER TO GENERAL NOTES ON DWG C–15

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

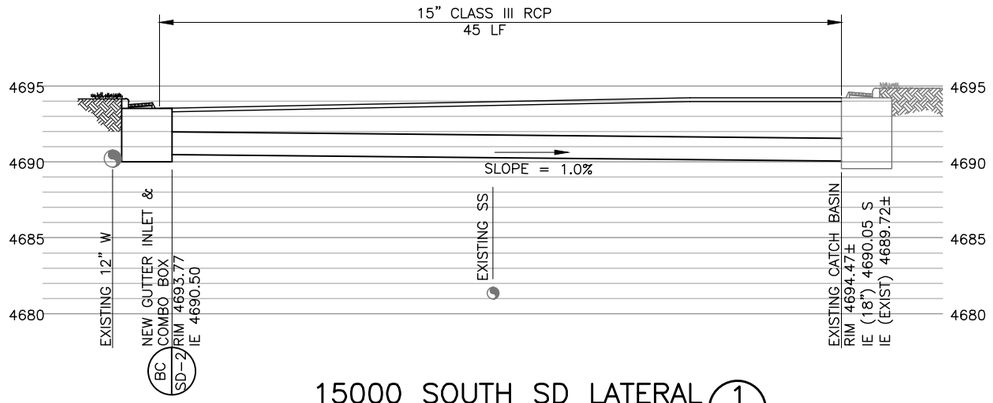
REVIEW CHECKED K. BAGLEY APPROVED J. LUETTINGER
DESIGN T. OLSEN DESIGN R. DARGER

CIVIL

TYPICAL ROAD SECTIONS

PROJECT NUMBER 010–08–03
DATE: FEBRUARY 2010

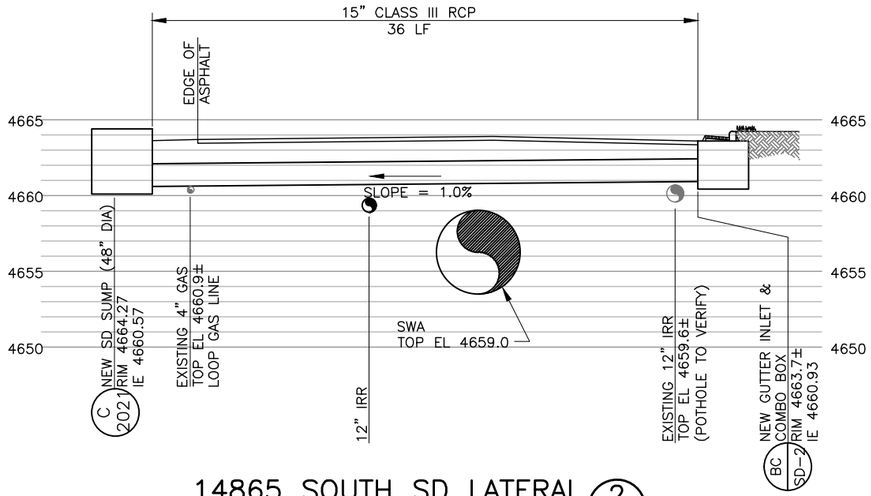
DRAWING NO. C–28
SHEET 51 OF 110



15000 SOUTH SD LATERAL 1

SCALE: 1"=5'

C-17



14865 SOUTH SD LATERAL 2

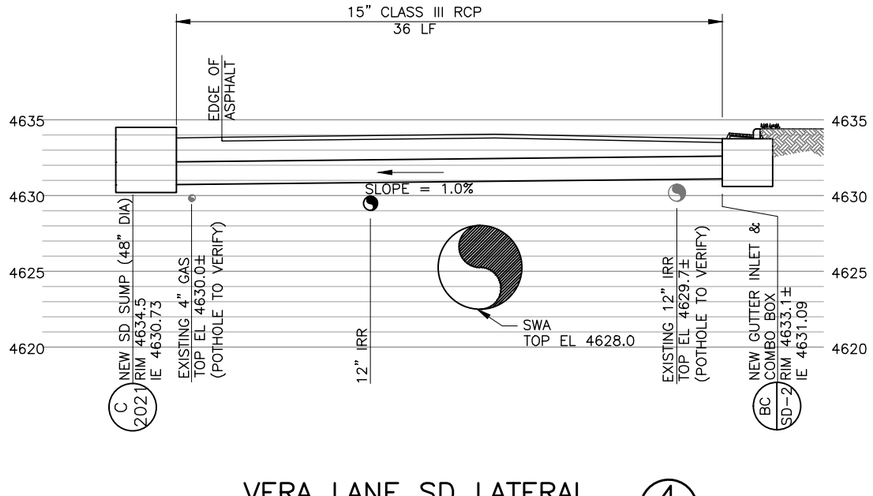
SCALE: 1"=5'

C-19

14750 SOUTH SD LATERAL 3

SCALE: 1"=5'

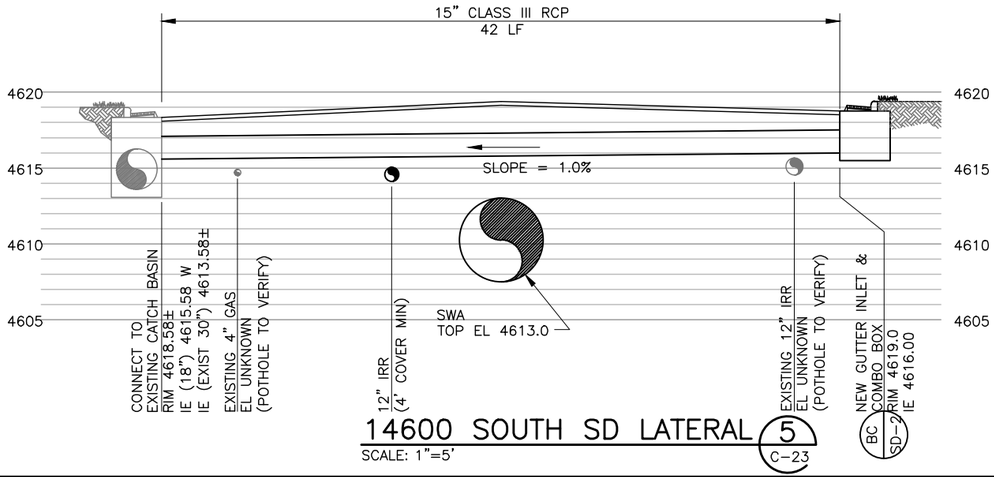
C-21



VERA LANE SD LATERAL 4

SCALE: 1"=5'

C-21



14600 SOUTH SD LATERAL 5

SCALE: 1"=5'

C-23

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	REVISIONS DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN R. DARGER
REVIEW CHECKED K. BAGLEY
APPROVED J. LUETTINGER

CIVIL

3200 WEST STORM DRAIN LATERAL PROFILES

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. C-29

SHEET 52 OF 110

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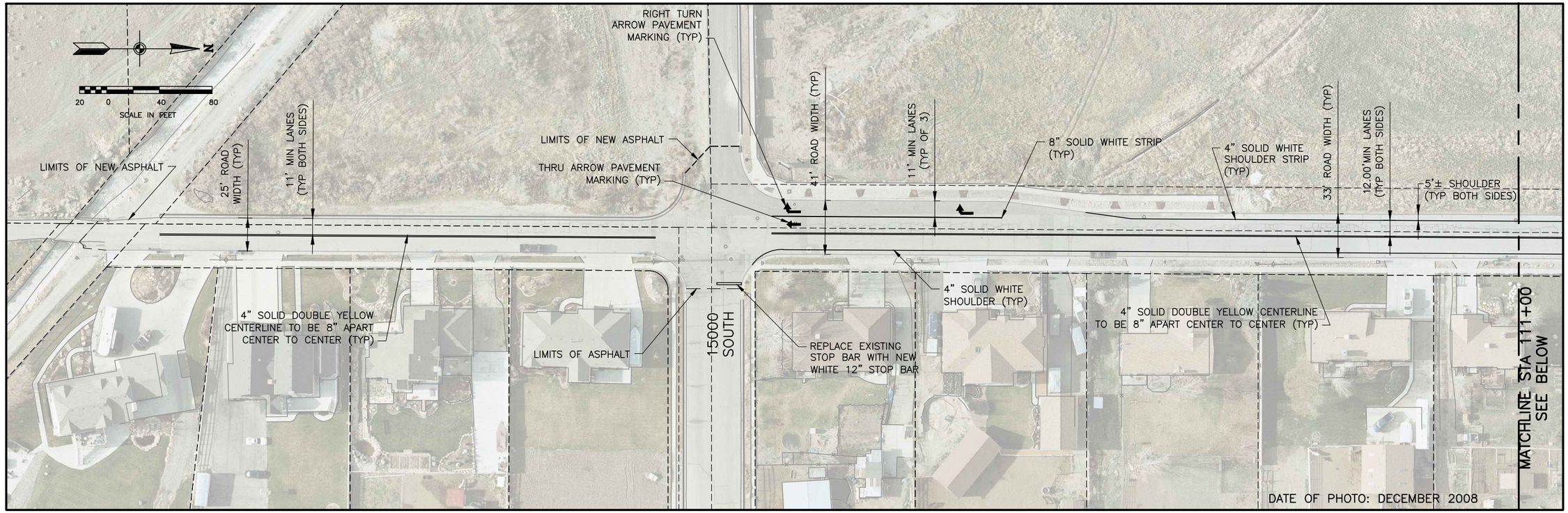

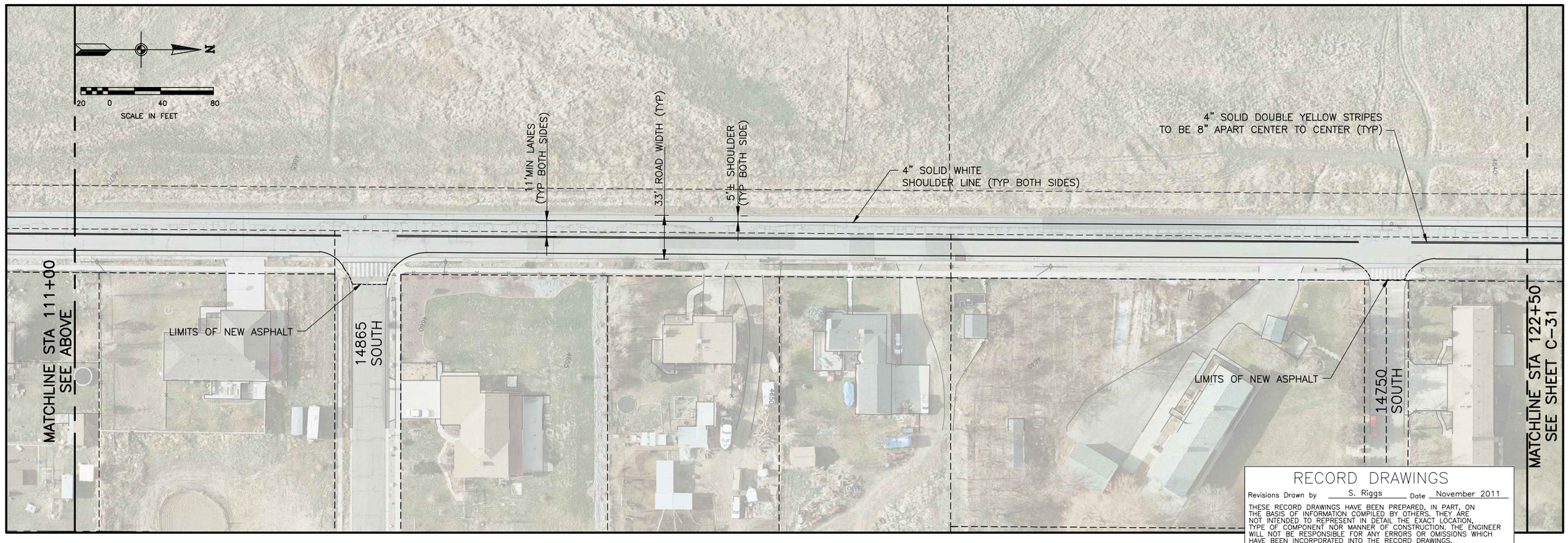

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

3200 WEST STRIPING PLAN

DESIGN T. OLSEN DESIGN
DRAWN B. ABEL DRAWN
REVIEW K. BAGLEY CHECKED
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. C-30

SHEET 53 OF 110

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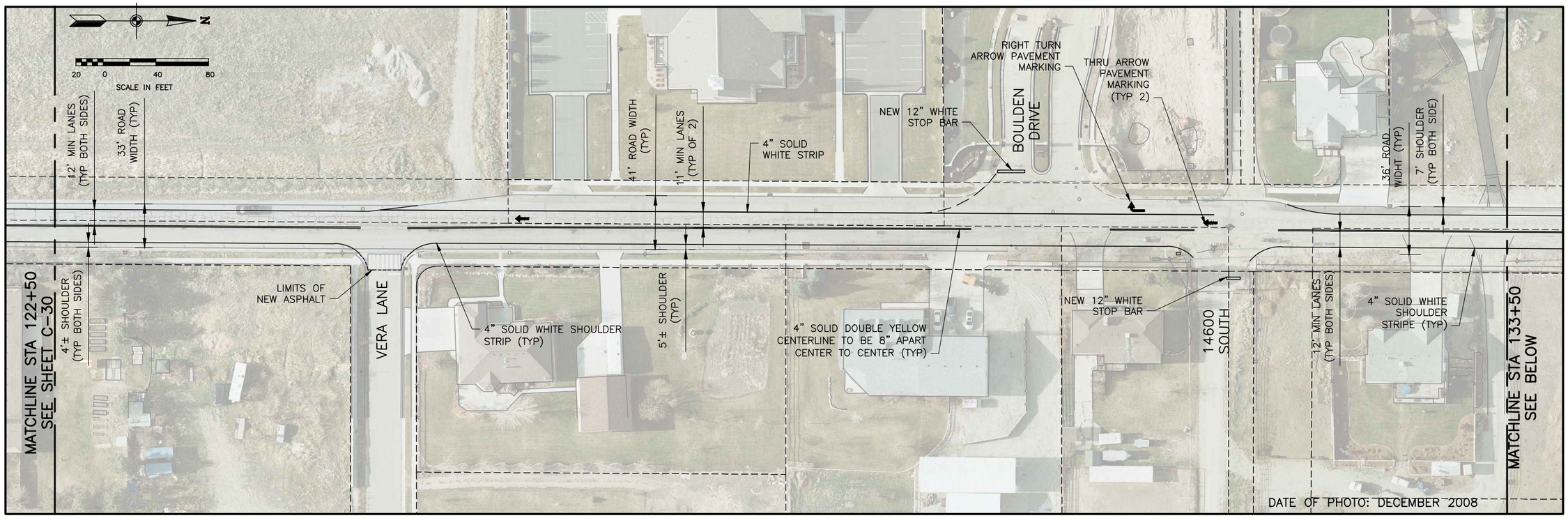

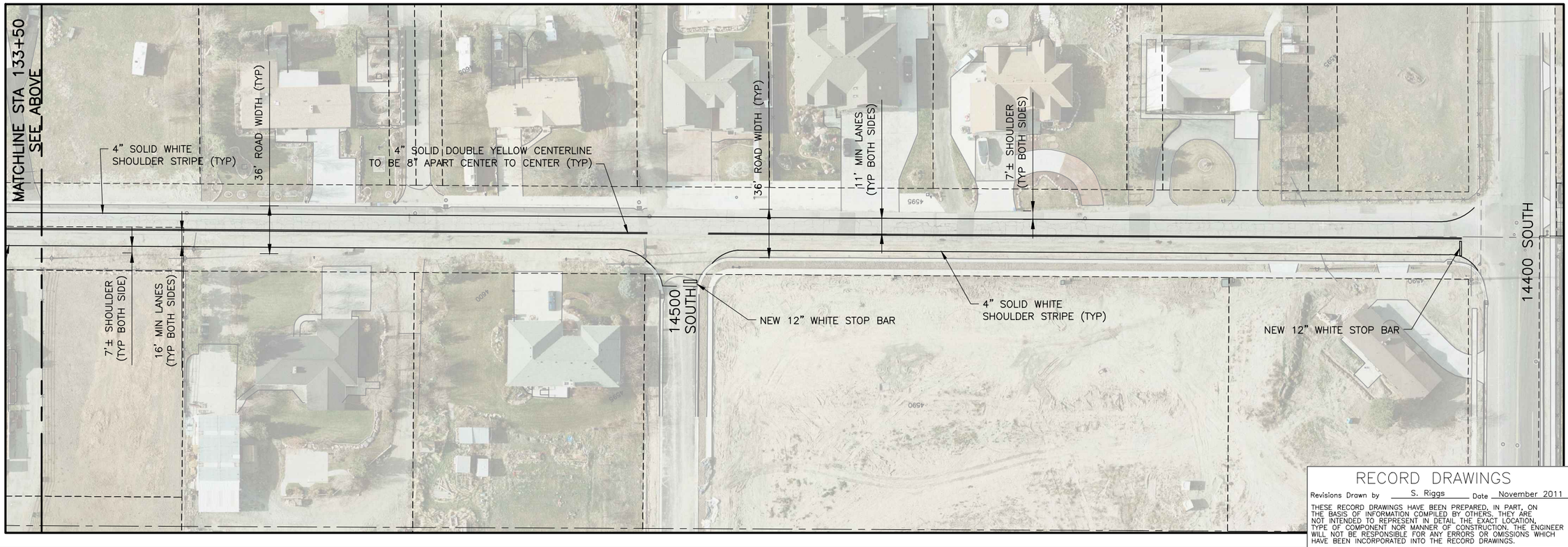

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DRAWN B. ABEL

REVIEW CHECKED K. BAGLEY APPROVED J. LUETTINGER

3200 WEST STRIPING PLAN

DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. C-31

SHEET 54 OF 110

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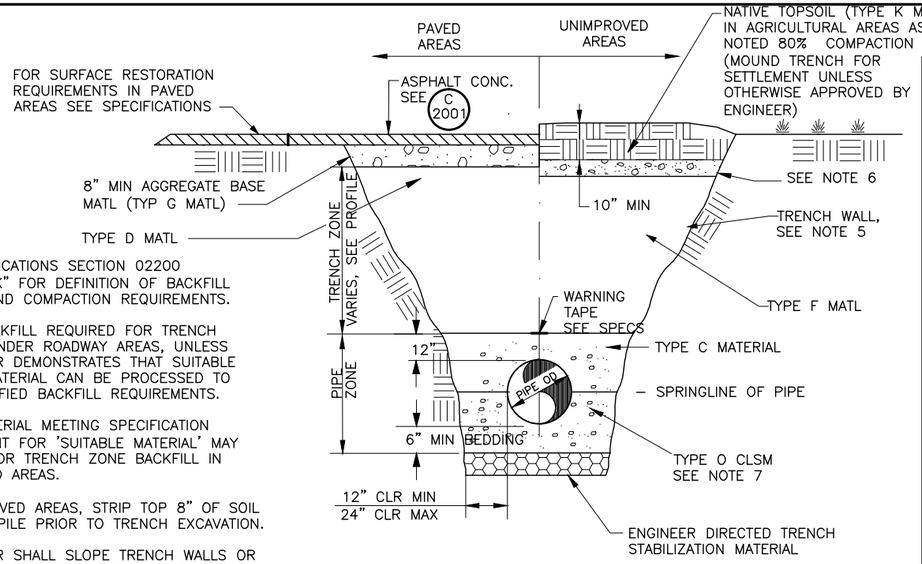
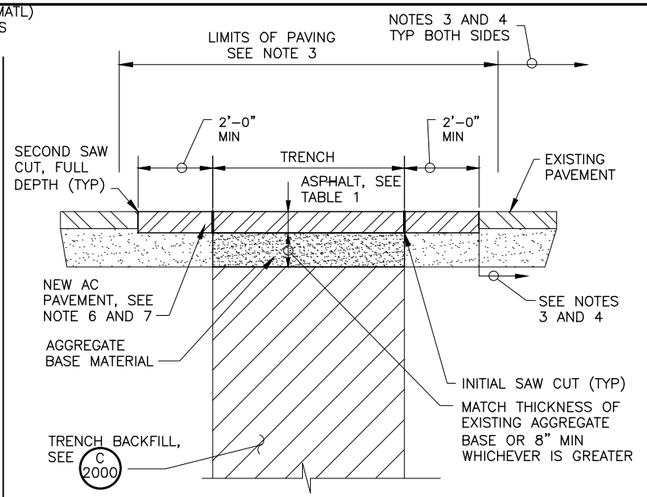


NOTES:

1. SEE SPECIFICATIONS SECTION 02200 "EARTHWORK" FOR DEFINITION OF BACKFILL MATERIAL AND COMPACTION REQUIREMENTS.
2. IMPORT BACKFILL REQUIRED FOR TRENCH BACKFILL UNDER ROADWAY AREAS, UNLESS CONTRACTOR DEMONSTRATES THAT SUITABLE ON-SITE MATERIAL CAN BE PROCESSED TO MEET SPECIFIED BACKFILL REQUIREMENTS.
3. NATIVE MATERIAL MEETING SPECIFICATION REQUIREMENT FOR 'SUITABLE MATERIAL' MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS.
4. IN UNIMPROVED AREAS, STRIP TOP 8" OF SOIL AND STOCKPILE PRIOR TO TRENCH EXCAVATION.
5. CONTRACTOR SHALL SLOPE TRENCH WALLS OR SHORE EXCAVATIONS IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS, SEE C 2003
6. TOP 6" OF TRENCH BACKFILL BENEATH THE TOPSOIL LAYER SHOULD BE INSTALLED, SMOOTHED, BUT LEFT UN-COMPACTED.
7. UNLESS NOTED ON DWGS. TYPE O CLSM PIPE ZONE MATERIAL FOR 36" DIA AND SMALLER MAY BE REPLACED W/TYPE C SAND PIPE BEDDING.

TYPICAL TRENCH BACKFILL SECTION

NTS — C 2000



NOTES:

1. REFER TO SECTION 01506 TRAFFIC CONTROL FOR LANE CLOSURE, DETOUR, AND TRAFFIC CONTROL REQUIREMENTS
2. CONTRACTOR SHALL PERMANENTLY REPLACE ALL PAVEMENT SURFACES, STRIPING, AND TRAFFIC CONTROLS IN ACCORDANCE WITH CITY STANDARDS PRIOR TO REMOVING DETOURS.
3. REMOVE ADDITIONAL PAVEMENT TO A PAINTED LANE STRIPE, A LIP OF GUTTER, A CURB, AN EXISTING PAVEMENT PATCH, OR AN EDGE OF THE PAVEMENT IF SUCH A FEATURE IS WITHIN FIVE FEET OF THE SECOND SAW CUT. IN NO CASE SHALL ASPHALT SEAM BE PLACED IN WHEEL PATH. IF MORE THAN 50% OF THE PERMANENT SURFACING OF A TRAVELED LANE IS IMPACTED BY THE EXCAVATION, THE ENTIRE LANE WIDTH SHALL BE SAW CUT, REMOVED, AND REPLACED.
4. ALL CONTRACTOR DAMAGED PAVEMENT OUTSIDE OF THE LIMITS SHOWN SHALL BE REMOVED AND REPLACED AT CONTRACTORS EXPENSE.
5. NOT USED.
6. HOT ASPHALTIC CONCRETE PAVEMENT SHALL BE PLACED IN TWO LIFTS. A TACK COAT SHALL BE PLACED BETWEEN LIFTS AND ALONG ALL VERTICAL SURFACES OF EXISTING PAVEMENT.
7. ASPHALT MIX DESIGN SHALL MEET LATEST VERSION OF CITY CONSTRUCTION SPECIFICATIONS (SEE TABLE). MIX DESIGN MUST BE SUBMITTED AND APPROVED BY CITY PRIOR TO PLACEMENT.
8. AMBIENT TEMPERATURE MUST BE 45° F AND RISING IN ORDER TO PLACE ASPHALT. ASPHALT PLACEMENT BETWEEN OCTOBER 1ST AND APRIL 1ST MUST HAVE CITY ENGINEERS APPROVAL.

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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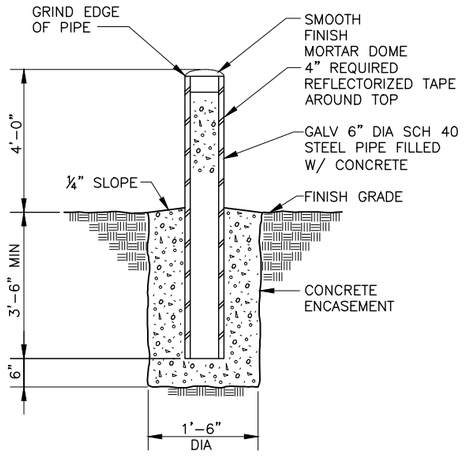
TRENCH BACKFILL AND SURFACE RESTORATION IN PAVED AREAS

NTS — C 2001

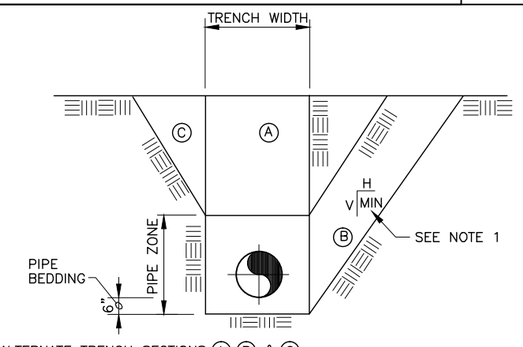
TABLE 1

LOCATION	PAVEMENT THICKNESS	ASPHALT TYPE
JVWTP	3"	AC-20-DM-3/4
3200 WEST	3"	AC-20-DM-3/4
15000 SOUTH	4"	AC-20-DM-3/4
14400 SOUTH	4"	AC-20-DM-3/4
13800 SOUTH	4"	AC-20-DM-3/4
13680 SOUTH	4"	AC-20-DM-3/4
SANDBORN AVE.	4"	AC-20-DM-3/4
13400 SOUTH	6"	AC-20-DM-3/4N



GUARD POST (BOLLARDS)

NTS — C 2002



ALTERNATE TRENCH SECTIONS (A) (B) & (C)

(A) VERTICAL TRENCH WALL
1. MAX UNSUPPORTED HEIGHT=3.5 FT.
2. FOR DEPTH OVER 3.5 FT SHORING OR SHEATHING REQUIRED.

(B) SLOPING TRENCH WALL
1. NOT TO BE USED WITHOUT APPROVAL OF ENGINEER.
2. REQUIRES IMPROVED PIPE ZONE BACKFILL OR INCREASE IN PIPE CLASS

(C) COMBINATION VERTICAL/SLOPING TRENCH
1. TRENCH IN PIPE ZONE SHALL HAVE VERTICAL WALLS WHERE STABLE SOIL EXISTS.

NOTES:

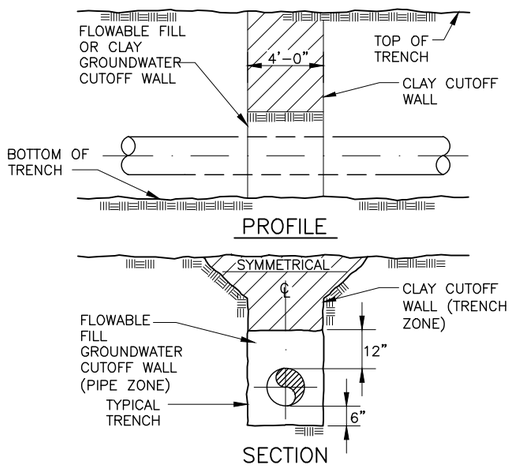
1. TRENCH EXCAVATIONS TO BE IN ACCORDANCE WITH OSHA SAFETY AND HEALTH STANDARDS FOR CONSTRUCTION. (29 CFR 1926).
2. CONTRACTOR TO PROVIDE SHORING OR TRENCH BOX IN ROADWAY AREAS TO MINIMIZE TRENCH WIDTH.
3. CONTRACTOR TO PROVIDE ALL DEWATERING MEASURES AS REQUIRED.

TYPICAL TRENCH EXCAVATION SECTION

NTS — C 2003

NOTES:

1. FORM 4' THICK FLOWABLE FILL GROUNDWATER CUTOFF WALL TO REPLACE PIPE ZONE AND BEDDING MATERIAL. BACKFILL 4' THICK CLAY IN TRENCH ZONE. CLAY MATERIAL TO BE SILTY SAND OR SAND AND 20 LB. BENTONITE CLAY PER CU. YD. OR COHESIVE SOIL WITH NO LESS THAN 20 PERCENT PASSING A NO. 200 SIEVE AND HAVING A PLASTICITY INDEX GREATER THAN 10. OR APPROVED EQUAL.
2. SEE PLAN AND PROFILE FOR LOCATIONS OF TRENCH PLUGS.

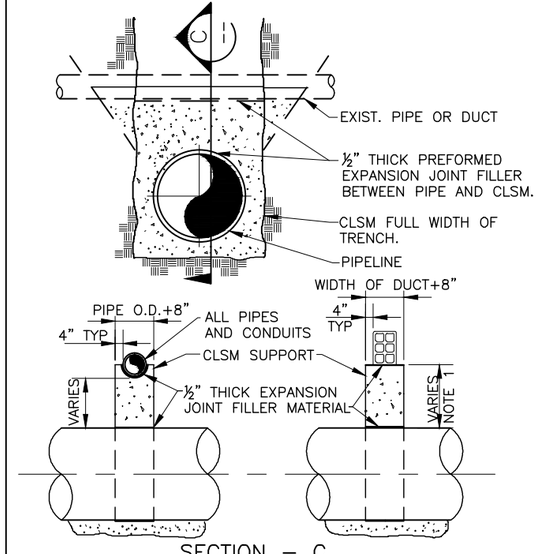


TRENCH PLUG

NTS — C 2004

NOTES:

1. BACKFILL TO BE BROUGHT UP UNIFORMLY ON BOTH SIDES OF CONC. SUPPORT.
2. CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE TO DETERMINE THE REQUIREMENTS OF PROVIDING ALL TEMPORARY SUPPORTS TO SUSPEND EXISTING UTILITIES IN OR ACROSS TRENCH DURING THE CONSTRUCTION OF THE NEW PIPE AND PRIOR TO THE COMPLETION OF THIS NEW SUPPORT.



UNDERGROUND UTILITY SUPPORT

NTS — C 2005

Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN — REVIEW CHECKED M. COLLINS — APPROVED J. LUETTINGER

DRAWN B. ABEL

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

CIVIL

CIVIL DETAILS - 1

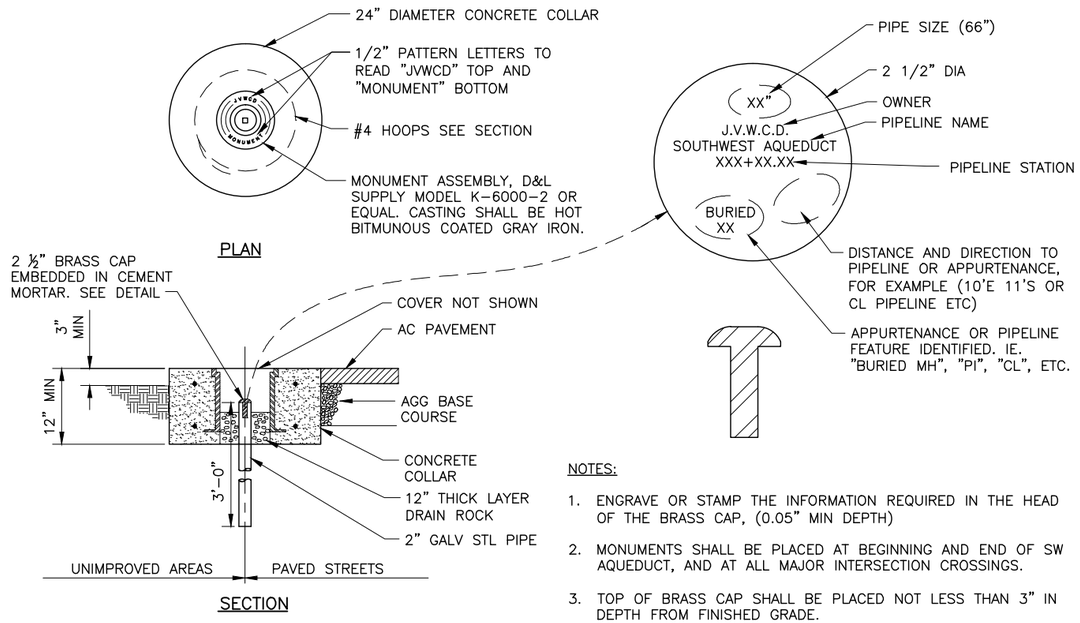
PROJECT NUMBER 010-08-03

DATE: FEBRUARY 2010

DRAWING NO. GC-1

SHEET 55 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GC01.dwg Nov15,2011 - 5:53pm



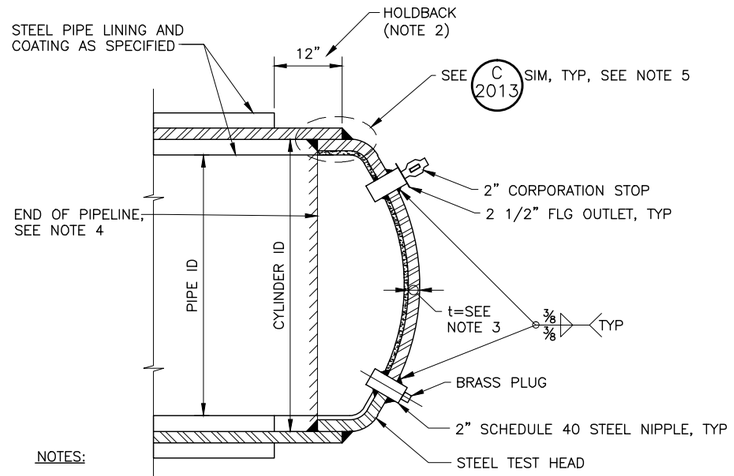
NOTES:

1. ENGRAVE OR STAMP THE INFORMATION REQUIRED IN THE HEAD OF THE BRASS CAP, (0.05" MIN DEPTH)
2. MONUMENTS SHALL BE PLACED AT BEGINNING AND END OF SW AQUEDUCT, AND AT ALL MAJOR INTERSECTION CROSSINGS.
3. TOP OF BRASS CAP SHALL BE PLACED NOT LESS THAN 3" IN DEPTH FROM FINISHED GRADE.

PIPELINE MARKERS

NTS

C 2006



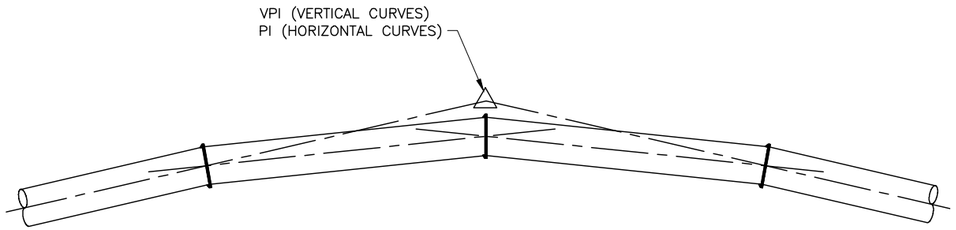
NOTES:

1. COAT TEMPORARY TEST HEAD AND PLAIN END WITH 3 MILS MIN RUST INHIBITING PRIMER. LINE AND COAT IN ACCORDANCE WITH SECTION 09910 WHERE PERMANENT END CAP IS SHOWN ON PLANS.
2. MINIMUM 8" HOLDBACK REQUIRED AFTER TEST HEAD IS CUT OFF.
3. WALL THICKNESS SHALL BE THE SAME AS THE ADJOINING PIPE.
4. SEE DRAWING FOR STATION AND LOCATION OF PIPELINE ENDS.
5. BUTT STRAP CONNECTION, OR FULL PENETRATION BUTT WELDS MAY BE SUBSTITUTED FOR LAP JOINT SHOWN.

DISH HEAD END CAP

NTS

C 2008



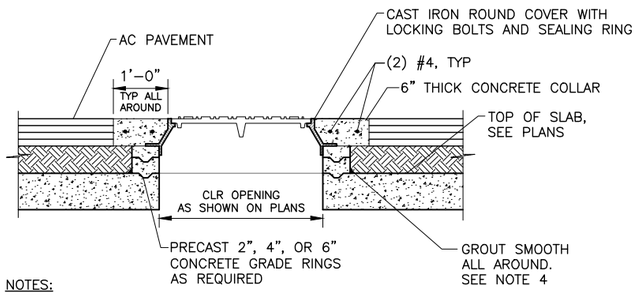
NOTES:

1. ALL HORIZONTAL AND VERTICAL CURVES ARE CIRCULAR.
2. HORIZONTAL AND VERTICAL CURVES SHALL BE MADE USING BEVELED JOINTS AND/OR DEFLECTED JOINTS. DO NOT USE COMBINED BEVELED AND DEFLECTED JOINTS.
3. THE MAXIMUM BEVEL ANGLE FOR BEVELED PIPE ENDS SHALL BE 5 DEGREES. SEE SPECIFICATIONS FOR MAXIMUM (NON-BEVELED) JOINT DEFLECTIONS.
4. ALL BEVEL OR DEFLECTION ANGLES SHALL BE EQUALLY DIVIDED THROUGHOUT THE CURVE.
5. FOR COMBINATION VERTICAL AND HORIZONTAL CURVES THE REQUIREMENTS FOR BOTH CONDITIONS SHALL BE COMBINED.
6. REFER TO PLAN AND PROFILE DRAWINGS FOR VERTICAL AND HORIZONTAL CURVE LOCATIONS.
7. 50' PIPE LENGTHS WERE ASSUMED TO DEVELOP VERTICAL CURVE DATA SHOWN ON PLANS. COORDINATE WITH ENGINEER IF DIFFERENT.

PIPELINE CURVES

NTS

C 2007



NOTES:

1. SET MANHOLE COVER AND CONCRETE COLLAR ¼" BELOW GRADE IN PAVED AREAS AND FLUSH WITH FINISH GRADE ELSEWHERE.
2. MANHOLE TO INCLUDE "JVWCD" NAME CAST INTO COVER.
3. PROVIDE MANHOLE WARNING BARRIER LABELED: "DANGER, CONFINED SPACE PERMIT REQUIRED FOR ENTRY"
4. ECOBASE II WATERPROOFING MEMBRANE PRODUCT OR EQUAL ON TOP EXTERIOR OF BURIED WALLS AND TOP OF CONCRETE STRUCTURE. APPLY MEMBRANE AROUND SIDES OF MANHOLE GRADE RINGS TO CREATE A WATERTIGHT SEAL TO TOP OF STRUCTURE.

MANHOLE COVER AND GRADE RINGS

NTS

C 2009

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN
DRAWN B. ABEL DRAWN
REVIEW M. COLLINS CHECKED
APPROVED J. LUETTINGER

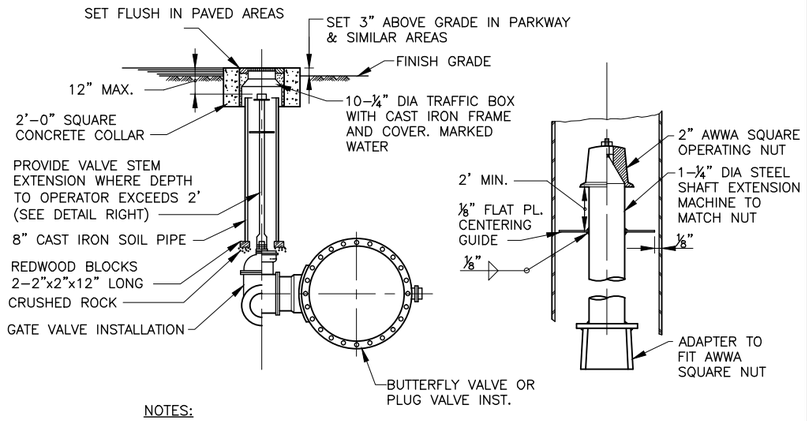
CIVIL

CIVIL DETAILS - 2

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. GC-2
SHEET 56 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GC02.dwg Nov15,2011 - 5:55pm

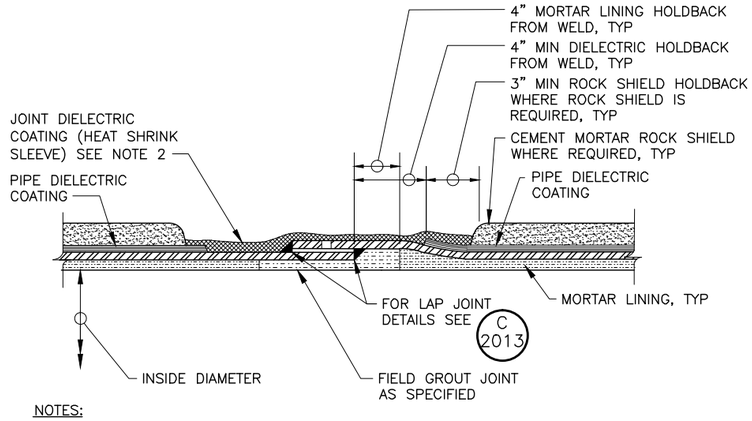


NOTES:

1. PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY IN ACCORDANCE WITH SPECS.
2. FOR LUBRICATED PLUG VALVE, EXTEND LUBRICATION LINE TO GRADE PER MANUFACTURES INSTRUCTIONS.
3. LOCK VALVE EXTENSION TO NUT.
4. COAT INTERIOR AND EXTERIOR OF CAST IRON SOIL PIPE AS SPECIFIED.

BURIED VALVE INSTALLATION

NTS — C 2010

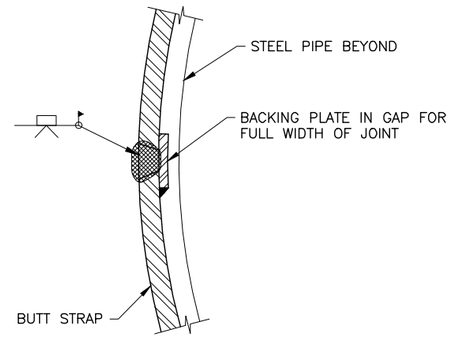


NOTES:

1. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRANT OR MAGNETIC PARTICLE TESTING PERFORMED BY THE ENGINEER. IF LEAKS ARE DETECTED, THE CONTRACTOR SHALL REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG TAPS WITH THREADED OR WELDED PLUG AT COMPLETION OF TEST AND COAT AND LINE AS SHOWN OR SPECIFIED. TAP HOLES MAY BE ON INSIDE OR OUTSIDE OF JOINT.
2. AFTER INSTALLATION OF JOINT DIELECTRIC COATING, A HOLIDAY TEST SHALL BE COMPLETED AS SPECIFIED BY NACE CERTIFIED SPECIALIST.

MORTAR LINED AND MORTAR COATED STEEL PIPE JOINT

NTS — C 2011



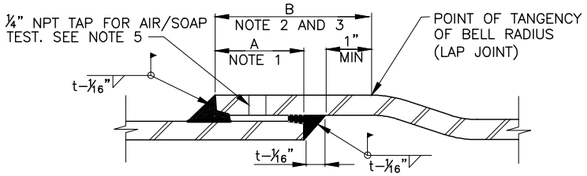
NOTES:

1. LININGS AND COATINGS ARE NOT SHOWN FOR CLARITY.
2. BEVEL ENDS OF BACKING PLATE AT BUTT STRAP PRIOR TO WELDING OR BACK GOUGE AT CONTACT WITH ADJACENT CYLINDER PRIOR TO COMPLETING INSIDE FILLET WELD.

BUTT STRAP SPLICE

NTS — C 2012

LINING AND COATING NOT SHOWN FOR CLARITY

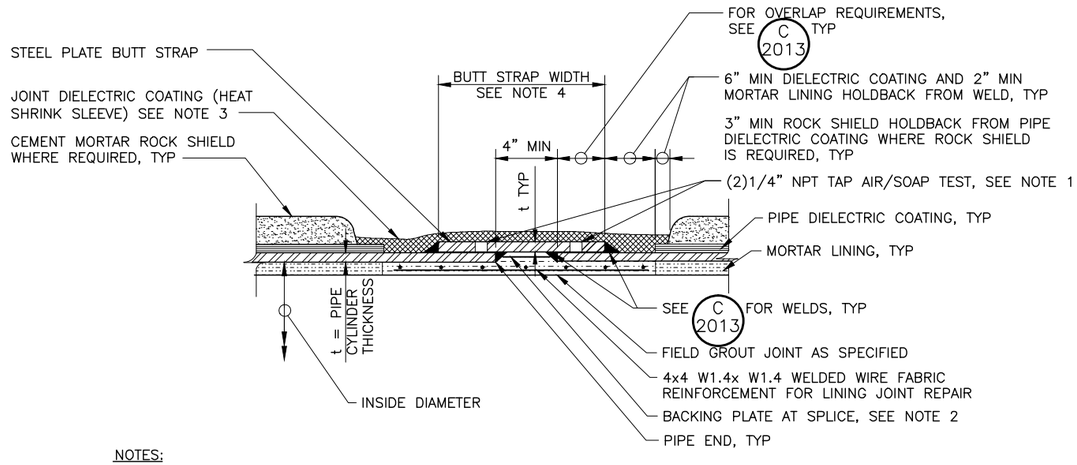


NOTES:

1. DIMENSION "A" CORRESPONDS TO THE COMPLETED JOINT OVERLAP AFTER WELDING. DIMENSION "A" SHALL BE THE GREATER OF 3" OR 5t, MINIMUM FOR STANDARD JOINTS. FOR SPECIAL TEMPURATURE CONTROL JOINTS, THE DIMENSION "A" JOINT OVERLAP SHALL BE INCREASED BY 3 INCHES AS FURTHER DISCUSSED IN NOTE 3.
2. FOR STANDARD JOINTS THE MINIMUM DIMENSION "B" SHALL BE AS REQUIRED TO PROVIDE THE MINIMUM OVERLAP DIMENSION "A" AND MAINTAIN THE INDICATED HOLDBACK FOR THE WELD.
3. FOR SPECIAL TEMPURATURE CONTROL JOINTS, THE MINIMUM DIMENSION "B" SHALL BE INCREASED BY AT LEAST 3 INCHES. AT THE TIME OF INSTALLATION AND PROIR TO WELDING, THE SPIGOT SHALL BE INSERTED INTO THE LENGTHENED BELL TO PROVIDE "A" +3 INCHES MINIMUM JOINT OVERLAP. SEE SPECIFICATIONS SECTION 02570 FOR SPECIAL TEMPERATURE CONTROL JOINT WELDING REQUIREMENTS.
4. FILLET WELDS FOR BELL AND SPIGOT LAP JOINTS SHOWN. FILLET WELDS ON OTHER JOINTS SIMILAR.
5. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRANT OR MAGNETIC PARTICLE TESTING PERFORMED BY THE ENGINEER. IF LEAKS ARE DETECTED, REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG HOLES WITH THREADED OR WELDED PLUG AT COMPLETION OF TEST AND COAT AS SHOWN. TAP HOLES MAY BE ON INSIDE OR OUTSIDE OF JOINT.
6. THE JOINTS SHALL BE FABRICATED AND INSTALLED TO BE WITHIN THE TOLERANCES INDICATED. THE TOLERANCE REQUIREMENTS SHALL APPLY TO BOTH WELDS AND TO BOTH STRAIGHT AND DEFLECTED JOINTS.
7. LAP JOINTS SHALL BE SINGLE LAP, UNLESS NOTED OTHERWISE. SINGLE LAP JOINTS SHALL BE INSIDE OR OUTSIDE AT CONTRACTORS OPTION. REFER TO SECTION 02570 FOR SPECIAL REQUIREMENTS.

LAP JOINT WELD

NTS — C 2013



NOTES:

1. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRANT OR MAGNETIC PARTICLE TESTING PERFORMED BY THE ENGINEER. IF LEAKS ARE DETECTED, THE CONTRACTOR SHALL REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG TAPS WITH THREADED OR WELDED PLUG AT COMPLETION OF TEST AND COAT AND LINE AS SHOWN OR SPECIFIED. TAP HOLES MAY BE ON INSIDE OR OUTSIDE OF JOINT.
2. FOR FIELD WELDING OF INDIVIDUAL BUTT STRAP PIECES TO EACH OTHER USING BUTT WELDS, SEE C 2012
3. AFTER INSTALLATION OF JOINT DIELECTRIC COATING, A HOLIDAY TEST SHALL BE COMPLETED AS SPECIFIED BY NACE CERTIFIED SPECIALIST.
4. UNLESS OTHERWISE NOTED, BUTT STRAP WIDTH SHALL CONFORM TO THE LIMITATIONS SHOWN FOR PIPE END SEPARATION AND STEEL OVERLAP REQUIREMENTS.

BUTT–STRAP JOINT

NTS — C 2014

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN DESIGN
DRAWN B. ABEL DRAWN
REVIEW M. COLLINS CHECKED
APPROVED J. LUETTINGER

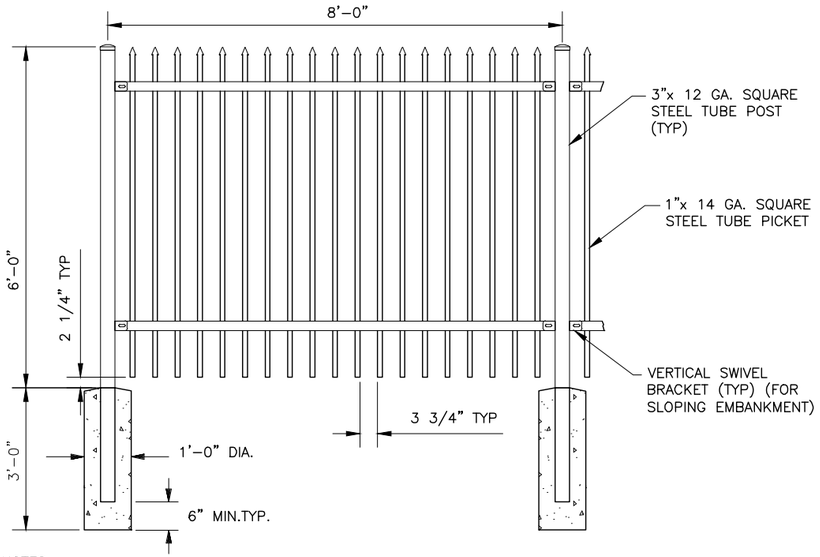
CIVIL

CIVIL DETAILS – 3

PROJECT NUMBER 010-08-03
DATE: FEBRUARY 2010

DRAWING NO. GC–3
SHEET 57 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GC03.dwg Nov15,2011 – 5:57pm

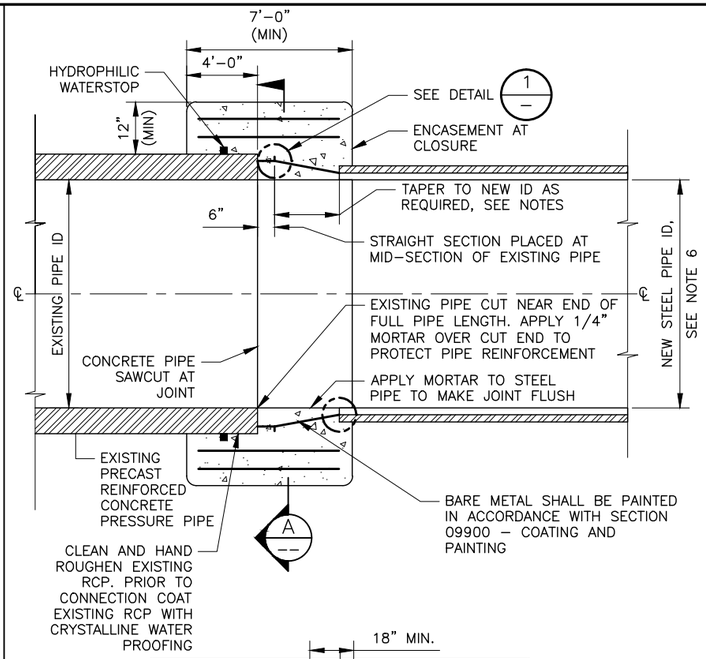


NOTES:

1. ORNAMENTAL METAL FENCE AND GATE SYSTEM MUST BE OF A PROVEN DURABLE RELIABLE AND STURDY DESIGN. FENCE AND GATE SYSTEM MUST BE CAPABLE OF WITHSTANDING LOCAL WIND LOADS. FENCE PANELS MUST BE CAPABLE OF WITHSTANDING A 600 LB. LOADING AT MIDSPAN WITHOUT PERMANENT DEFORMATION.
2. CONTRACTOR TO SUBMIT SHOP DRAWINGS AND PRODUCT LITERATURE TO ENGINEER FOR REVIEW PRIOR TO FABRICATION. SEE SPECIFICATIONS.
3. CONTRACTOR SHALL COORDINATE FENCE PAINT COLOR WITH OWNER PRIOR TO FABRICATION.

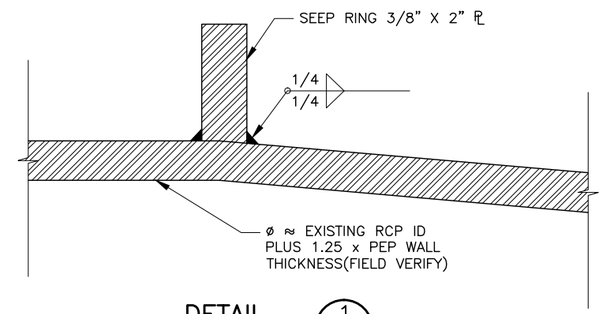
ORNAMENTAL PICKET FENCE

NTS — C 2015



NOTES:

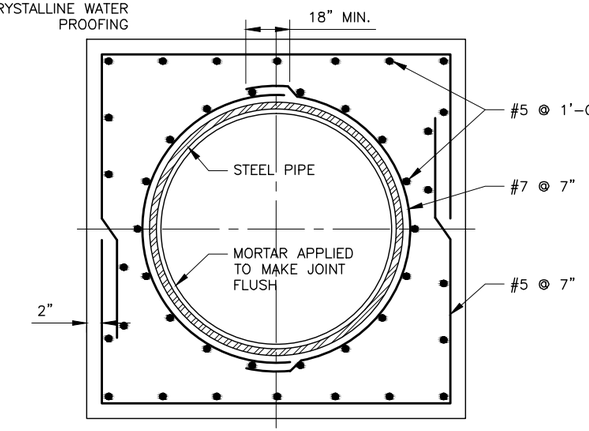
1. CONTRACTOR MAY SUBMIT ALTERNATIVE DESIGNS FOR APPROVAL.
2. TAPER BETWEEN DIAMETER AT JOINT AND NEW STEEL PIPE DIAMETER AT 7–1/2 DEGREE ANGLE.
3. TEMPORARY STRUTS AND CROSS BRACING SHALL REMAIN IN PLACE TO HOLD STEEL PIPE ROUND AND IN PLACE DURING CONCRETE ENCASEMENT AND WELDING OF JOINTS.
4. CONCRETE PIPE SHALL BE CUT FLUSH USING DIAMOND SAW OR OTHER METHOD TO ENSURE A SMOOTH EVEN CUT. STEEL PIPE SHALL BE BUTTED UP TO THE SAWCUT JOINT.
5. THE MINIMUM STEEL CYLINDER THICKNESS FOR CLOSURE SECTIONS SHALL CONFORM TO THAT GIVEN IN SPECIFICATIONS OF THE ADJACENT PIPE.
6. TRANSITIONS FROM CONCRETE PIPE TO LARGER DIAMETER STEEL PIPE SHALL BE SIMILAR. TRANSITION SHALL NOT TAKE PLACE AT THE JOINT, BUT SHALL BE FABRICATED AS A NEW STEEL PIPE REDUCER LOCATED IMMEDIATELY ADJACENT TO THE CONNECTION.
7. POLYURETHANE COAT CONCRETE ENCASED PIPE AND END OF PIPE TO PREVENT ELECTRICAL CONTACT WITH RCP OR CONCRETE REINFORCEMENT. BUTT WSP CYLINDER AGAINST EXISTING RCP.
8. TROWEL GROUT FINISHED JOINT GAP WITH CRYSTALLINE WATER PROOFING MIXED WITH GROUT.



DETAIL 1 –

NOTE:

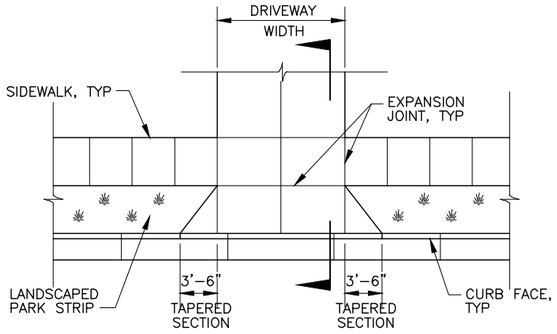
1. WHERE NEW CONCRETE COLLAR IS CONSTRUCTED ADJACENT TO TRIFURCATION STRUCTURE, DOWEL AND EPOXY #5 REINFORCED INTO EXISTING CONCRETE.



SECTION A –

EXISTING REINFORCED CONCRETE PIPE TO NEW STEEL PIPE CONNECTION

NTS — C 2016



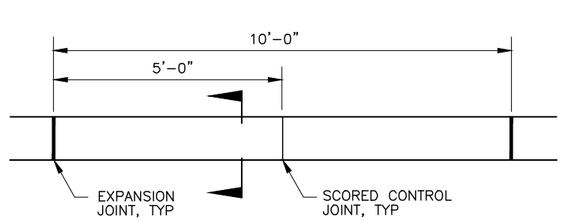
SECTION

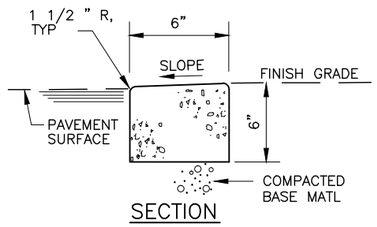
NOTES:

1. SEE BLUFFDALE AND RIVERTON CITY STANDARD DETAILS FOR WIDTHS OF WALKS AND PARKSTRIPS

DRIVE APPROACH

NTS — C 2017





SECTION

NOTES:

1. EXPANSION JOINTS OF 1/2" PREMOLDED JOINT FILLER SHALL BE PLACED 1/4" BELOW FINISHED SURFACE OF CONCRETE.
2. DEPTH OF CONTROL JOINTS SHALL BE APPROXIMATELY ONE QUARTER OF CONCRETE SLAB THICKNESS, BUT NOT LESS THAN 1".
3. ALL EXPOSED SURFACES OF CURB SHALL BE GIVEN A MORTAR BRUSH COAT CONSISTING OF ONE PART PORTLAND CEMENT, ONE PART SAND AND THEN TROWELED SMOOTH.

CONCRETE MOW STRIP

NTS — C 2018

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER
DESIGN T. OLSEN DESIGN
DRAWN B. ABEL

CIVIL
CIVIL DETAILS – 4

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. GC–4
SHEET 58 OF 110

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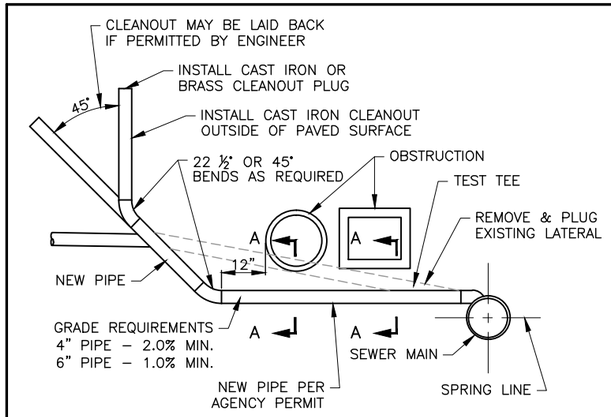
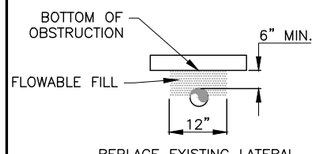


SEWER LATERAL REPLACEMENT

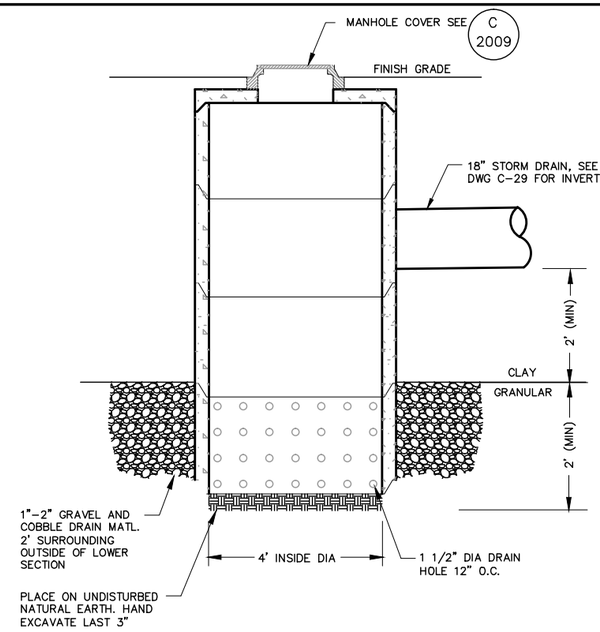
1. INSPECTION:
   - A. PRIOR TO INSTALLATION, SECURE ACCEPTANCE BY ENGINEER FOR ALL PIPE, FITTINGS, AND COUPLINGS.
   - B. PRIOR TO BACKFILLING SEWER LATERAL RELOCATION, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. INSTALLATION:
   - A. PROVIDE AGENCY APPROVED WYE OR TEE WITH APPROPRIATE DONUT.
   - B. TAPE WRAP PIPE AS REQUIRED BY SOIL CONDITIONS.
   - C. DO NOT INSTALL COUPLINGS UNDER THE OBSTRUCTION.
3. ALL RELOCATED SEWER LATERALS SHALL MAINTAIN A 10–FOOT HORIZONTAL SEPARATION AND BE 18–INCHES BELOW EXISTING WATER LATERAL MAINS.



REPLACE EXISTING LATERAL PER AGENCY PERMIT

SEWER LATERAL RELOCATION (C 2019)

NTS

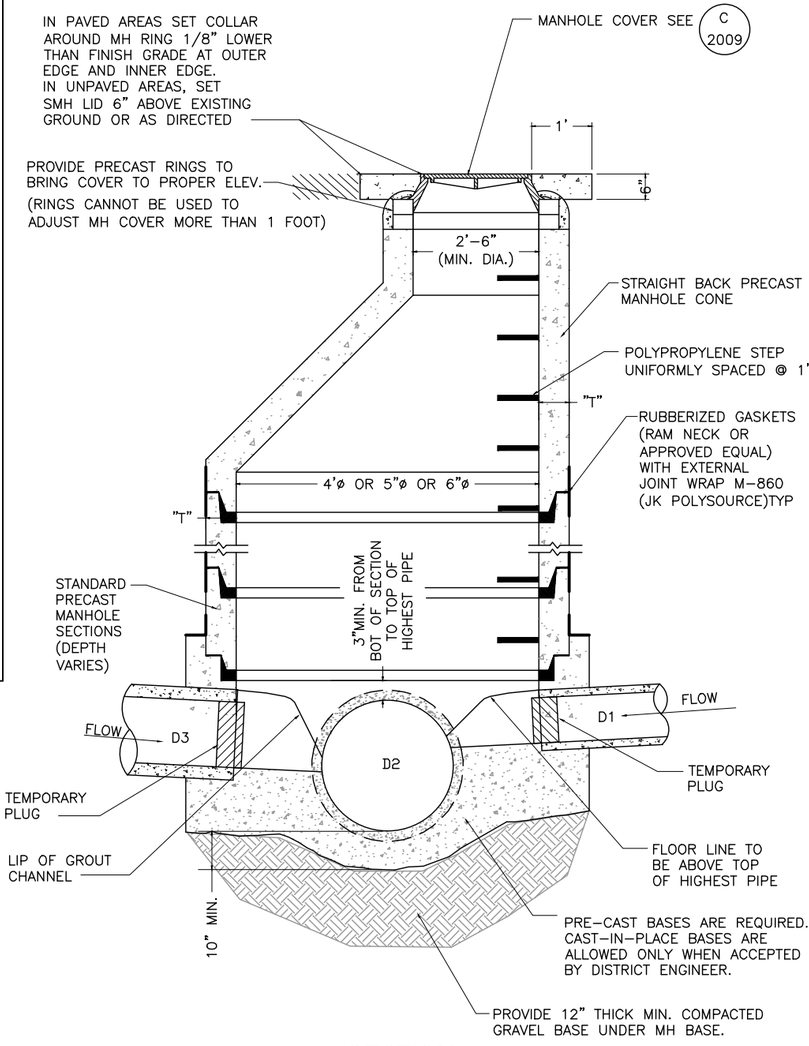


NOTES

1. MANHOLE BASE AND ALL SECTIONS SHALL BE PRECAST TO CONFORM TO ASTM C478.

STORM DRAIN SUMP (C 2021)

NTS



WALL THICKNESS (T)	
SMH DIA	T (INCHES)
4'	5"
5'	6"
6'	7"

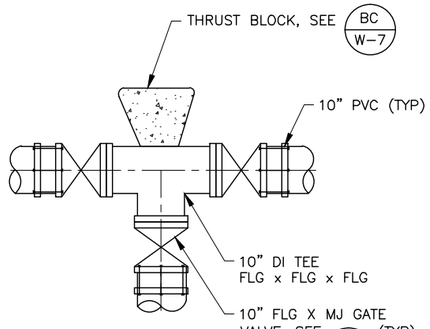
SECTION

NOTES:

1. INVERTS D1, D2 AND D3 SHALL MATCH THOSE SHOWN IN PLANS.
2. IF MANHOLE IS TO BE POURED IN PLACE, FOLLOW SAME PATTERN AS SHOWN EXCEPT USE 10" MIN WALL THICKNESS.
3. SET MANHOLE FRAME AND COVER TO 1/8" BELOW FINISH GRADE AFTER FINAL STREET GRADING IS COMPLETE.
4. CONE AND WALL SECTIONS TO CONFORM TO ASTM C–478
5. PLUG OUTLET OF DOWNSTREAM MANHOLE UNTIL CONSTRUCTION IS COMPLETE.
6. PIPES D1, D2 AND D3 SHALL BE CONNECTED TO MANHOLE USING PRESS–SEAL 545 PSX CONNECTORS.
7. SET MANHOLE ON FIRM, STABLE, DRY BASE. ENSURE GROUNDWATER IS REMOVED TO A MIN. DEPTH OF 12" BELOW THE BOTTOM OF EXCAVATION.
8. IF NATIVE SOILS AT BOTTOM OF EXCAVATION AREA ARE SOFT, DISTURBED OR OTHERWISE UNSUITABLE, OVEREXCAVATE TO A DEPTH OF 12" AND BACKFILL WITH STABILIZATION GRAVEL.

STANDARD MANHOLE (C 2020)

NTS

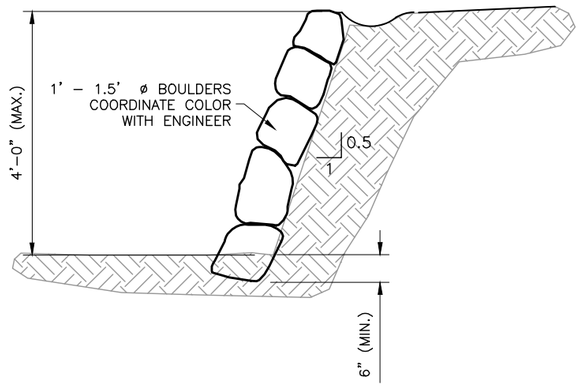


NOTES:

1. SEE DWG M–1 FOR VALVE SCHEDULE AND TESTING REQUIREMENTS.
2. SEE PLANS FOR VALVE, FITTING, AND PIPE SIZES.

TYPICAL IRRIGATION TEE CONNECTION DETAIL (C 2022)

NTS



NOTE:
COMPACT SOIL TO 90% OF IT'S MODIFIED PROCTOR IN LIFTS NOT TO EXCEED 8"

ROCK RETAINING WALL (C 2023)

NTS

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2

DESIGN T. OLSEN
DRAWN B. ABEL
REVIEW
CHECKED J. LUETTINGER
APPROVED M. COLLINS

CIVIL DETAILS – 5

PROJECT NUMBER 010–08–03
DATE: FEBRUARY 2010

DRAWING NO. GC–5
SHEET 59 OF 110

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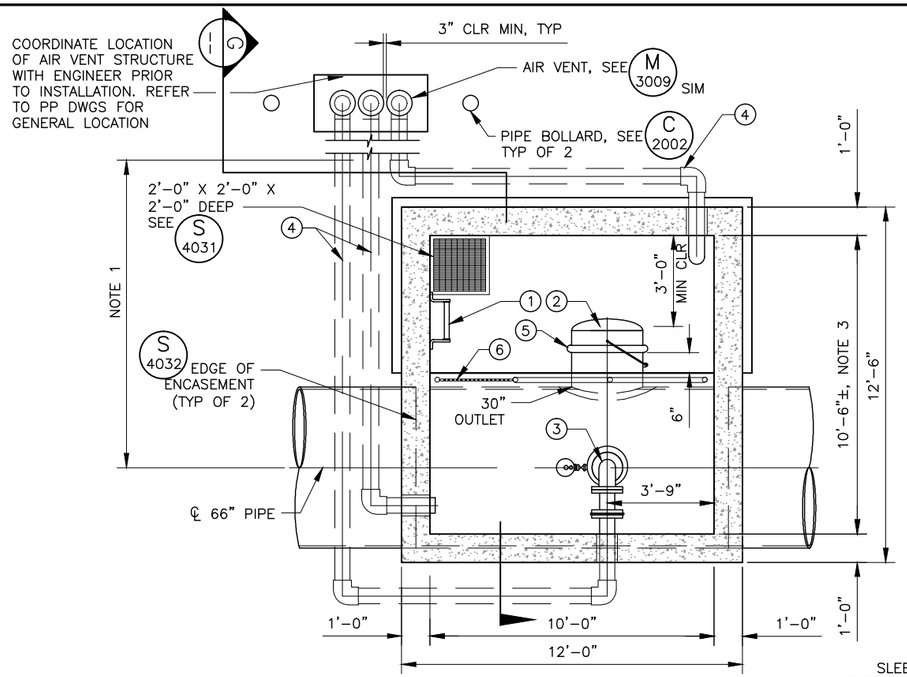
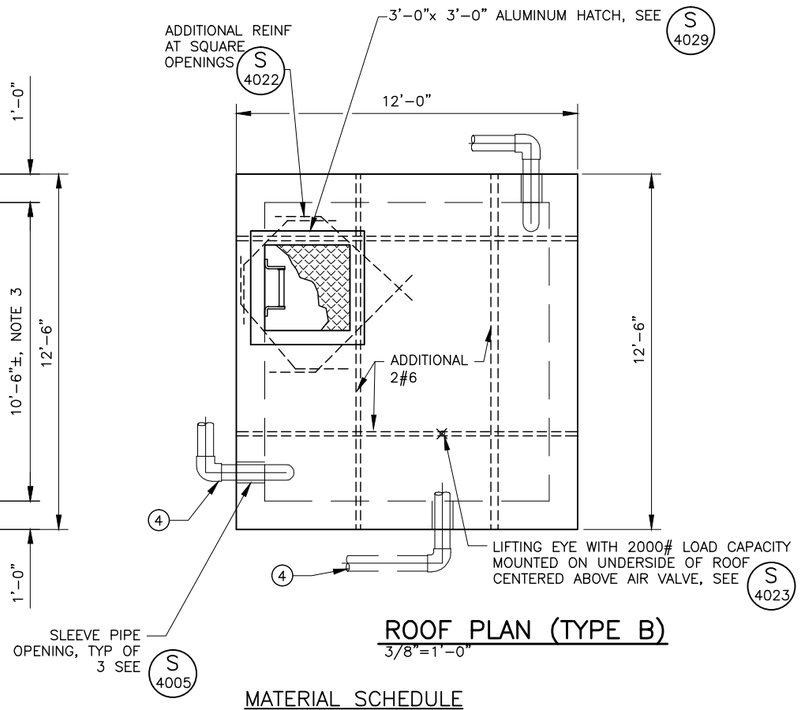
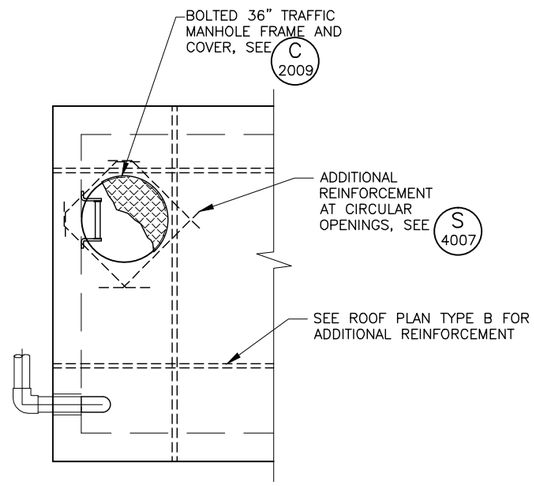


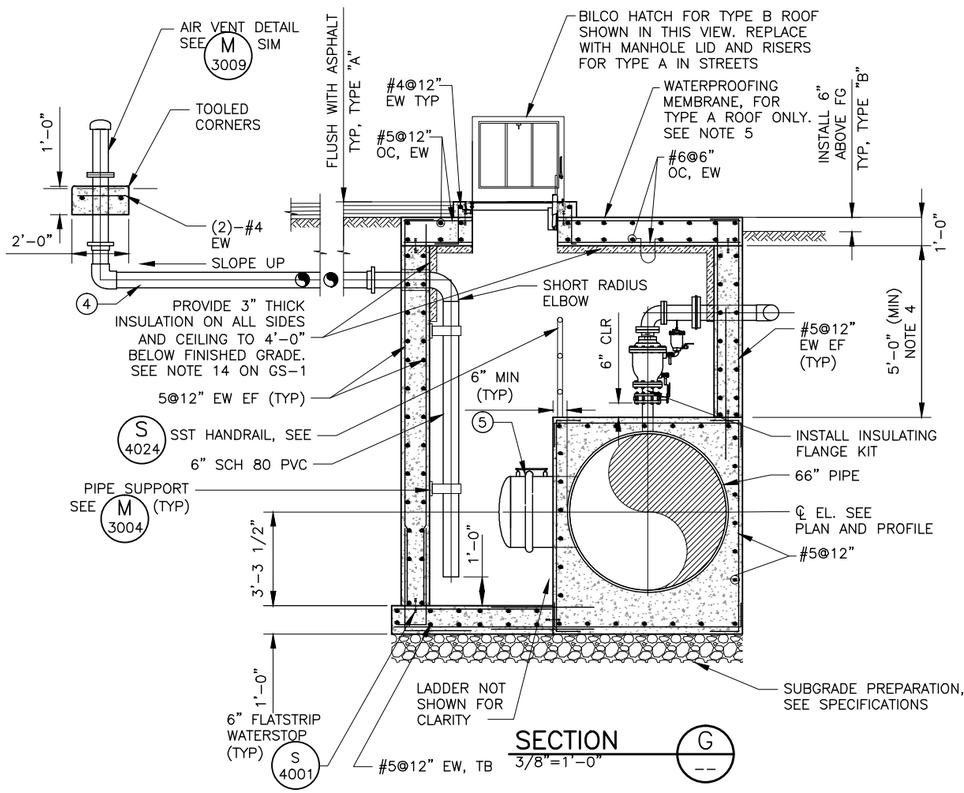
FLOOR PLAN
3/8"=1'-0"



ROOF PLAN (TYPE B)
3/8"=1'-0"



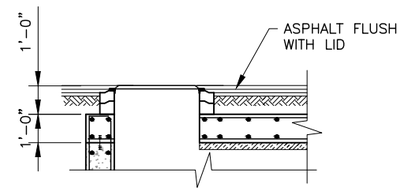
ROOF PLAN (TYPE A)
3/8"=1'-0"



SECTION G
3/8"=1'-0"

MATERIAL SCHEDULE

1. SST LADDER (TYP) WITH SAFETY CLIMB DEVICE CENTERED IN OPENING, SEE S 4026
2. 30" HINGED ACCESS MANWAY, SEE M 3013
3. 6" COMBINATION AIR VALVE WITH INTEGRAL LOW PROFILE BUTTERFLY ISOLATION. SEE MECHANICAL SCHEDULE AND M 3001
4. 6" SCH 80 PVC VENT PIPE.
5. 30" RESTRAINED GROOVED END COUPLING.
6. SAFETY CHAIN, SEE S 4036



SECTION (TYPE A)
3/8"=1'-0"

NOTES:

1. LENGTH AND CONFIGURATION FOR PIPING PER DETAILS SHOWN ON PP DWGS. CONTRACTOR TO PROVIDE PIPING AND FITTINGS AS REQUIRED TO INSTALL VENT PIPING BEHIND SIDEWALK AS SHOWN ON PLANS.
2. PROVIDE CONFINED SPACE ENTRY WARNING BARRIER AT MANHOLE ENTRANCE. BARRIER LABEL SHALL READ "DANGER, CONFINED SPACE PERMIT REQUIRED FOR ENTRY"
3. PROVIDE 3'-0" MINIMUM CLEARANCE BEYOND EDGE OF ACCESS MANWAY. ADJUST WIDTH OF VAULT IF NECESSARY BASED UPON FIELD LOCATION OF 66" PIPE.
4. NOTIFY ENGINEER IMMEDIATELY IF DIMENSIONAL CONFLICT ARISES BETWEEN VAULT AND CONTRACTOR SUPPLIED CARV. ADJUSTMENT WILL BE MADE DURING SHOP DRAWING REVIEW IF NECESSARY.
5. APPLY ECOBASE II WATERPROOFING MEMBRANE PRODUCTS OR EQUAL ON EXTERIOR OF BURIED WALLS AND TOP OF CONCRETE STRUCTURE. APPLY MEMBRANE AROUND SIDES OF VAULT AND AROUND MANHOLE GRADE RINGS AND COVERS TO CREATE A WATERTIGHT SEAL TO TOP OF STRUCTURE.
6. THE AIR VALVE MANWAY IS CLASSIFIED AS A HIGHLY-CORROSIVE ENVIRONMENT. ALL METAL FABRICATIONS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 05500 - MISCELLANEOUS METALS. ALL PROTECTIVE COATINGS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 09900 - COATING AND PAINTING.
7. ALL MISCELLANEOUS METAL FABRICATIONS AND HARDWARE SHALL BE STAINLESS STEEL.
8. ALL FLANGE HARDWARE, INCLUDING BOLTS, NUTS, AND WASHERS, SHALL BE CARBON STEEL, ASTM A307 GRADE A AND COATED IN ACCORDANCE WITH SECTION 09900 - PAINTING.
9. SEE DWG M-1 FOR AIR VALVE SCHEDULE

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

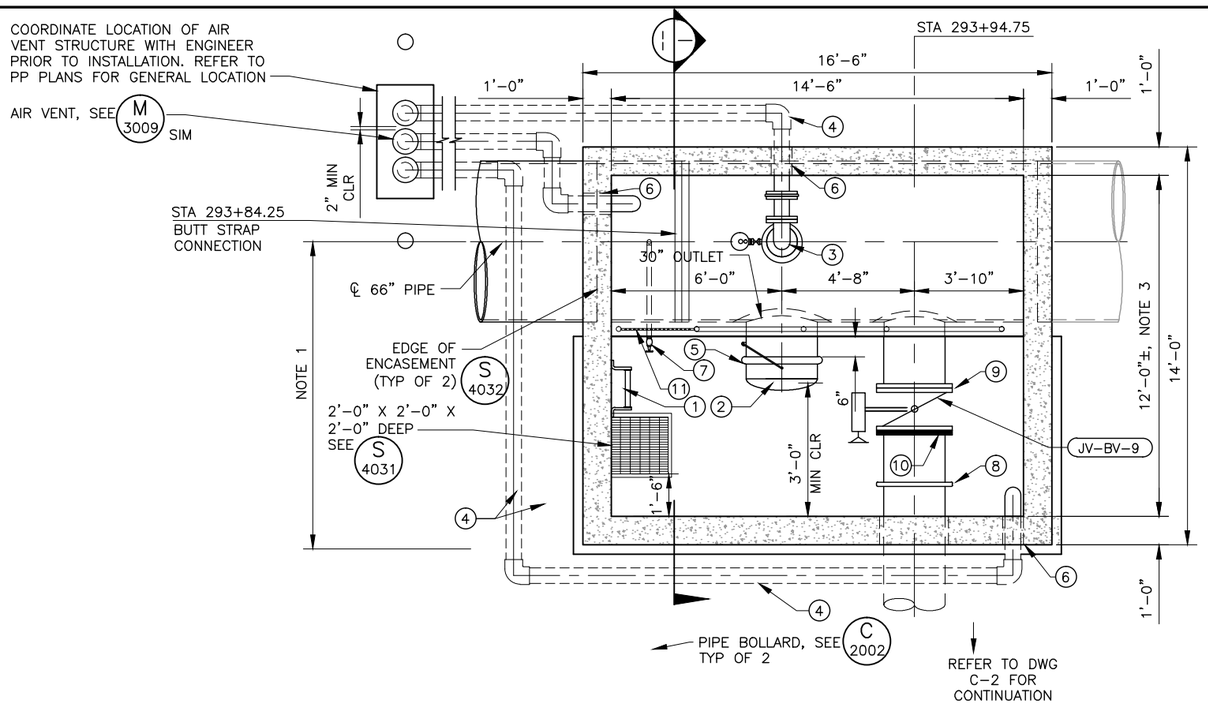
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DRAWN B. ABEL
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

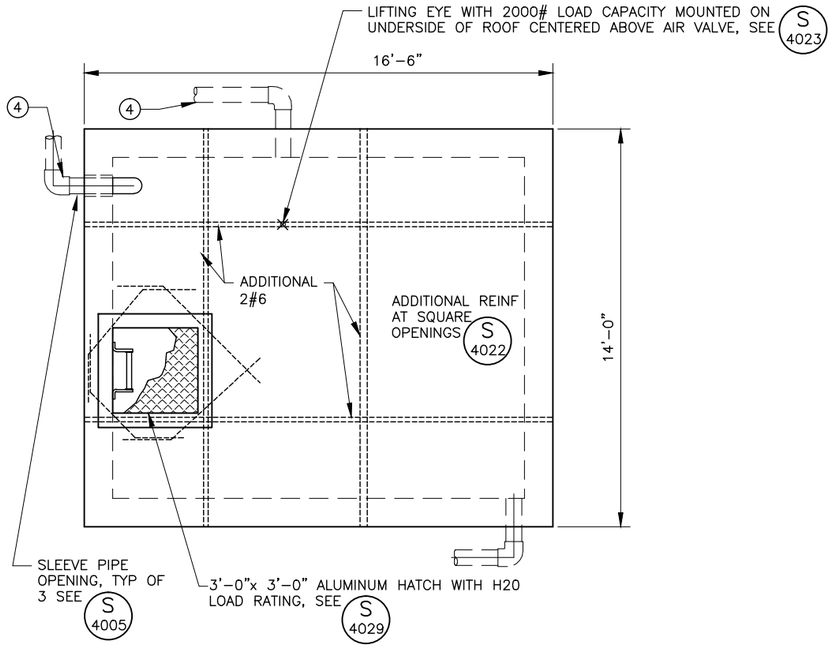
TYPICAL AIR VALVE/MANWAY FLOOR PLAN & ROOF PLAN

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

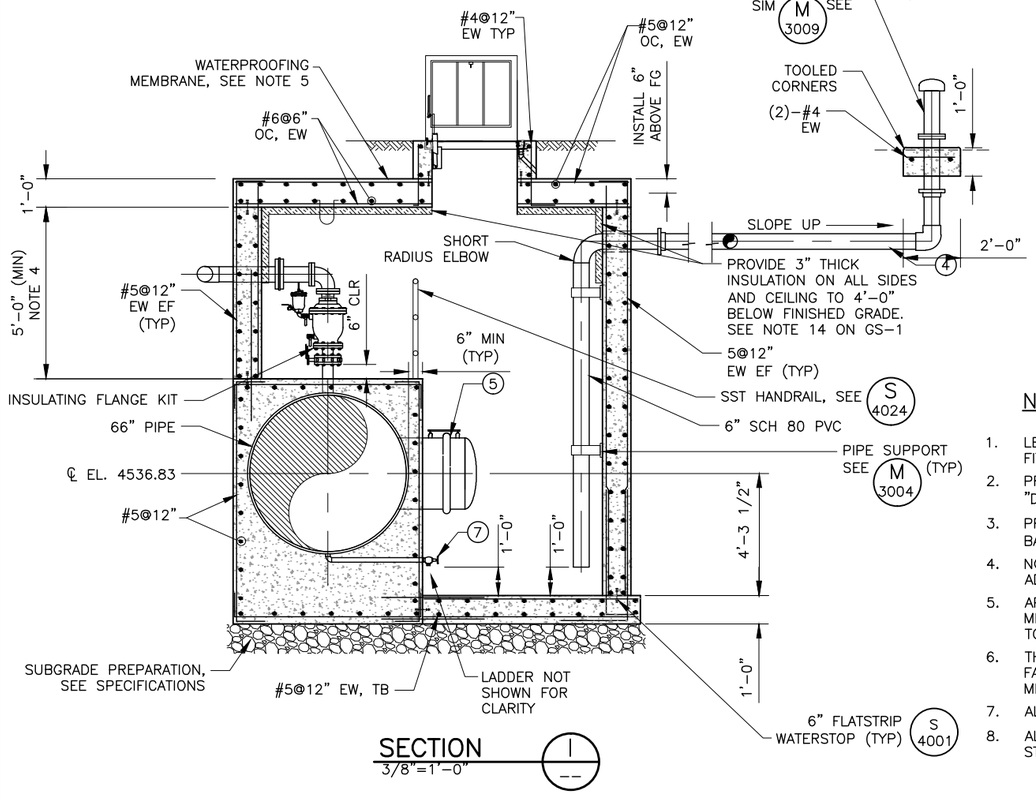
DRAWING NO. PA-1
SHEET 60 OF 110



FLOOR PLAN
3/8"=1'-0"



ROOF PLAN
3/8"=1'-0"



SECTION
3/8"=1'-0"

MATERIAL SCHEDULE

1. SST LADDER (TYP) WITH SAFETY CLIMB DEVICE CENTERED IN OPENING, SEE (VAULT ACCESS LADDER ONLY) S 4026
2. 30" HINGED ACCESS MANWAY, SEE M 3013
3. 6" COMBINATION AIR VALVE WITH INTEGRAL LOW PROFILE BUTTERFLY ISOLATION. SEE DWG M-1 FOR AIR VALVE SCEDULE, SEE M 3001
4. 6" SCH 80 PVC VENT PIPE.
5. 30" RESTRAINED GROOVED END COUPLING.
6. SLEEVED PIPE OPENING, SEE S 4005
7. 1-½" DIA HOSE BIB, SEE M 3018
8. 24" RESTRAINED GROOVED END COUPLING
9. 24" BUTTERFLY VALVE WITH MANUAL ACTUATOR
10. 24" DIA INSULATING FLANGE, SEE M 3002
11. SAFETY CHAIN, SEE S 4036

NOTES:

1. LENGTH AND CONFIGURATION FOR PIPING PER DETAILS SHOWN ON PP DWGS. CONTRACTOR TO PROVIDE PIPING AND FITTINGS AS REQUIRED TO INSTALL VENT PIPING ADJACENT TO SOUND WALLS AS SHOWN ON PLAN.
2. PROVIDE CONFINED SPACE ENTRY WARNING BARRIER AT MANHOLE ENTRANCE. BARRIER LABEL SHALL READ: "DANGER, CONFINED SPACE PERMIT REQUIRED FOR ENTRY"
3. PROVIDE 3'-0" MINIMUM CLEARANCE BEYOND EDGE OF ACCESS MANWAY. ADJUST WIDTH OF VAULT IF NECESSARY BASED UPON FIELD LOCATION OF 66" PIPE.
4. NOTIFY ENGINEER IMMEDIATELY IF DIMENSIONAL CONFLICT ARISES BETWEEN VAULT AND CONTRACTOR SUPPLIED CARV. ADJUSTMENT WILL BE MADE DURING SHOP DRAWING REVIEW IF NECESSARY.
5. APPLY ECOBASE II WATERPROOFING MEMBRANE PRODUCTS OR EQUAL ON TOP OF CONCRETE STRUCTURE. APPLY MEMBRANE AROUND SIDES OF VAULT AND AROUND MANHOLE GRADE RING COVERS TO CREATE A WATERTIGHT SEAL TO TOP OF STRUCTURE.
6. THE RIVERTON PUMP STATION AIR VALVE MANWAY IS CLASSIFIED AS A HIGHLY-CORROSIVE ENVIRONMENT. ALL METAL FABRICATIONS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 05500 – MISCELLANEOUS METALS. ALL PROTECTIVE COATINGS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 09900 – PAINTING.
7. ALL MISCELLANEOUS METAL FABRICATIONS AND HARDWARE SHALL BE STAINLESS STEEL.
8. ALL LARGE DIAMETER (>24") FLANGE HARDWARE, INCLUDING BOLTS, NUTS, AND WASHERS, SHALL BE CARBON STEEL, ASTM A307 GRADE A AND COATED IN ACCORDANCE WITH SECTION 09900 – COATING AND PAINTING.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

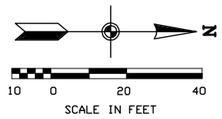
DESIGN T. OLSEN DESIGN
DRAWN B. ABEL DRAWN
REVIEW M. COLLINS CHECKED
APPROVED J. LUETTINGER

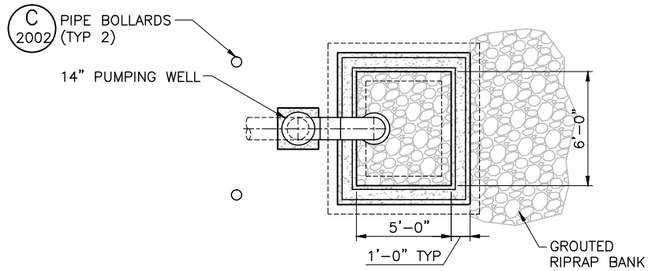
RIVERTON PUMP STATION AIR VALVE/MANWAY FLOOR PLAN & ROOF PLAN

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

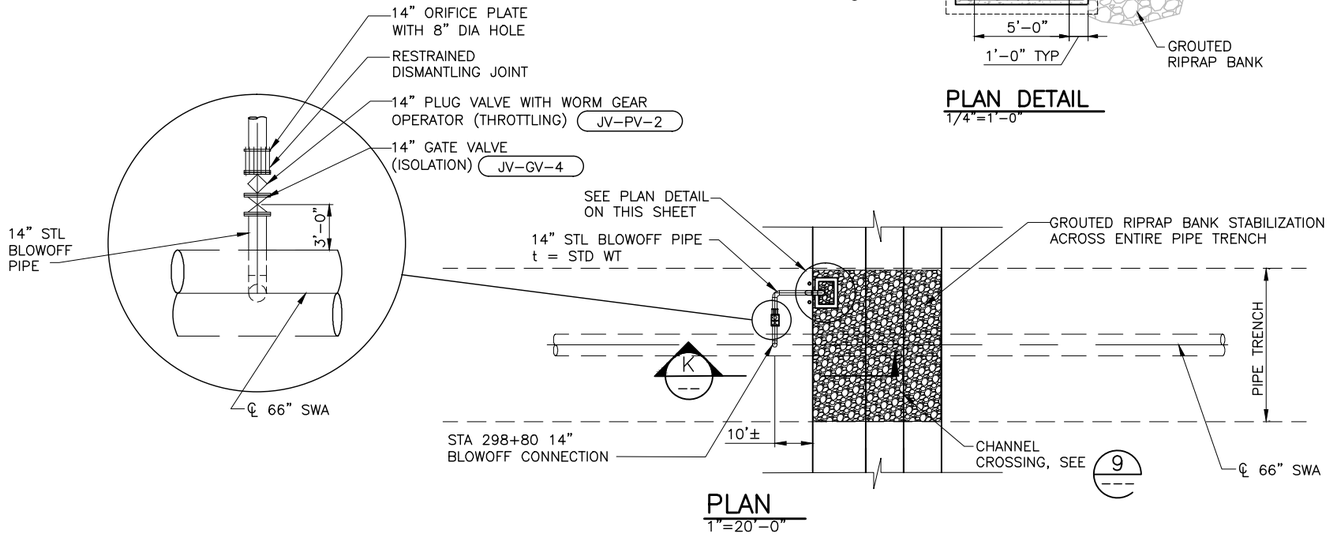
DRAWING NO. PA-2
SHEET 61 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_PA02.dwg Nov16,2011 – 8:36am

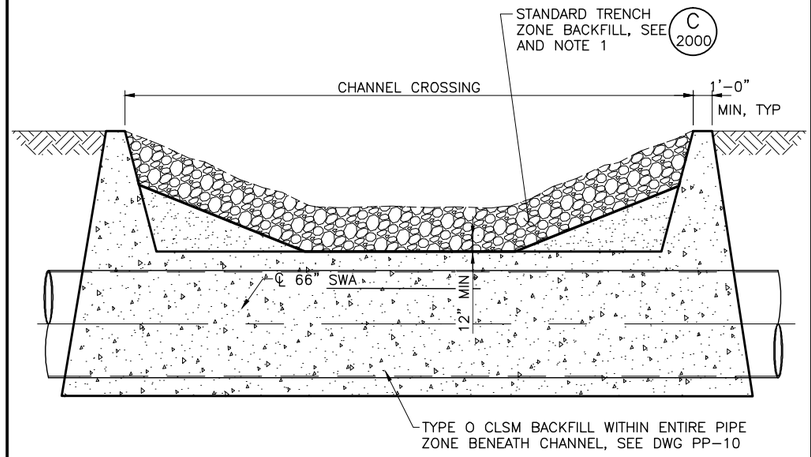




PLAN DETAIL
1/4"=1'-0"

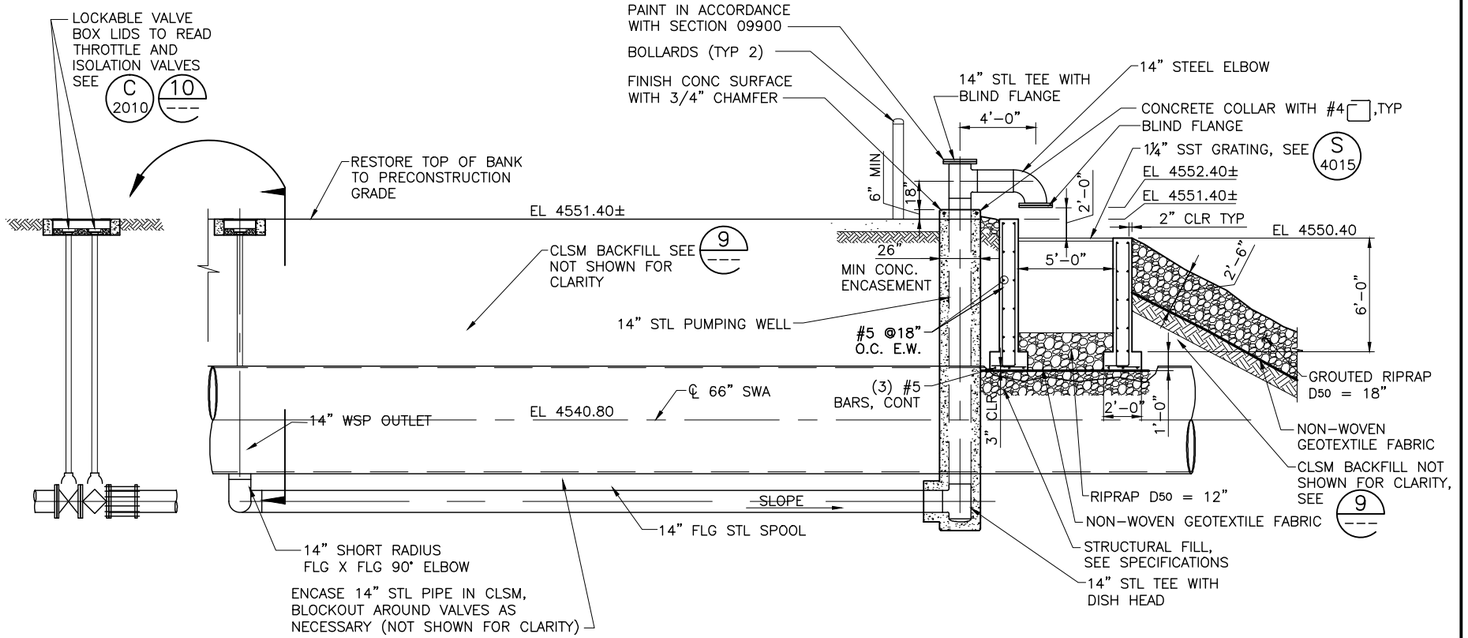


PLAN
1"=20'-0"

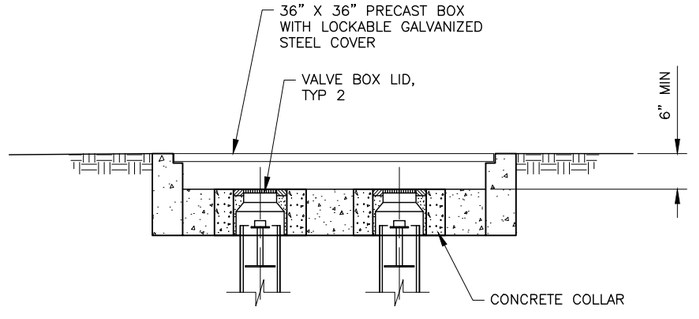


NOTES:
1. STRUCTURAL BACKFILL SHALL BE COMPACTED TO 96% OF MAXIMUM DENSITY (ASTM D1557) WITHIN ALL AREAS OF CHANNEL EMBANKMENT DISTURBED BY CONSTRUCTION.

CHANNEL CROSSING 9
1/4"=1'-0"



SECTION K
1/4"=1'-0"



LOCKABLE VALVE BOX 10
NTS

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

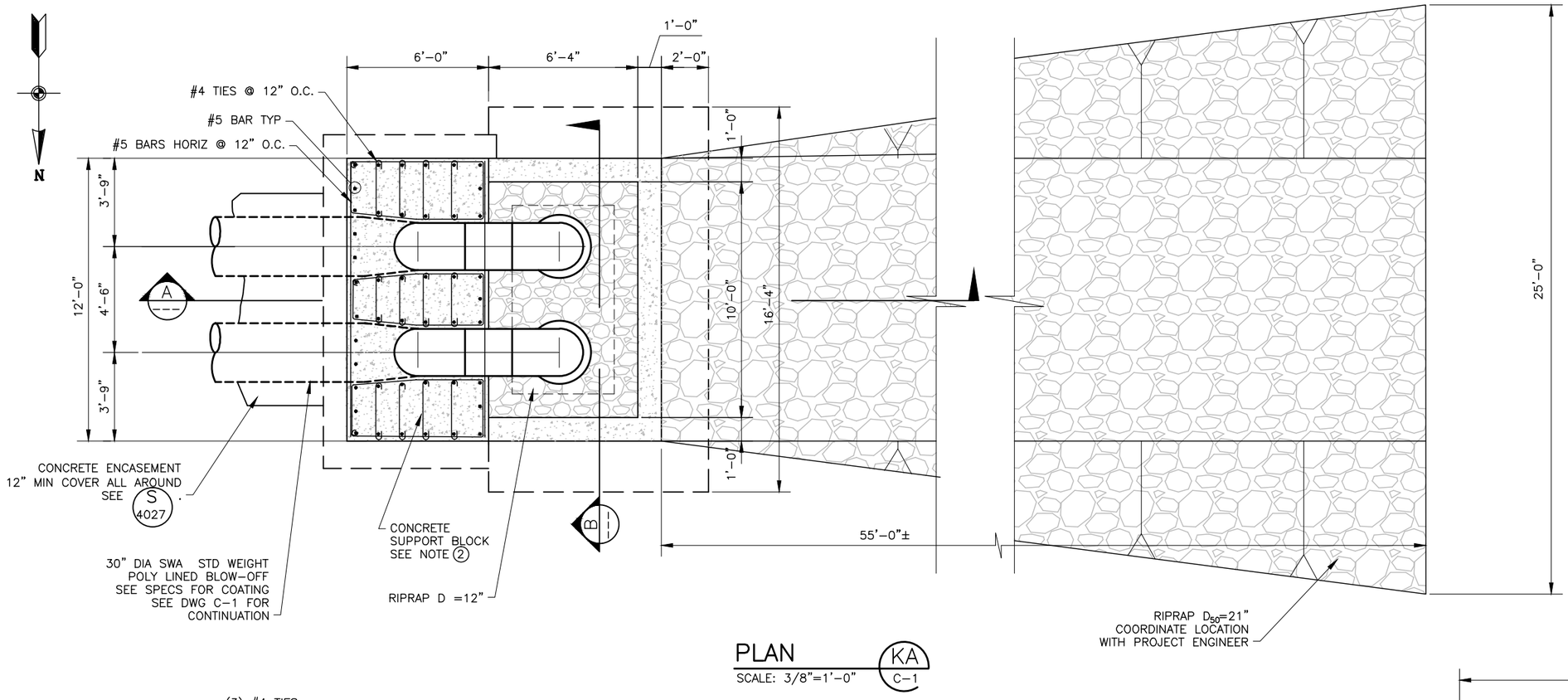
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DRAWN B. ABEL
REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

CIVIL
ROSE CREEK CROSSING
DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. PA-3
SHEET 62 OF 110

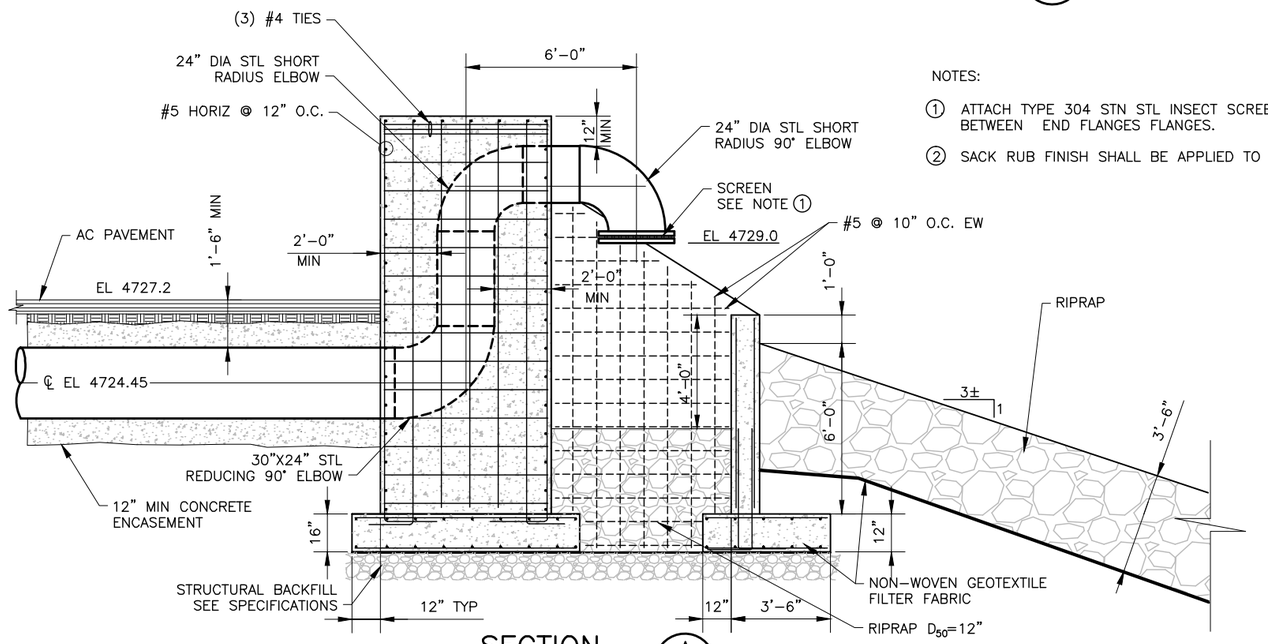


PLAN (KA C-1)

SCALE: 3/8"=1'-0"

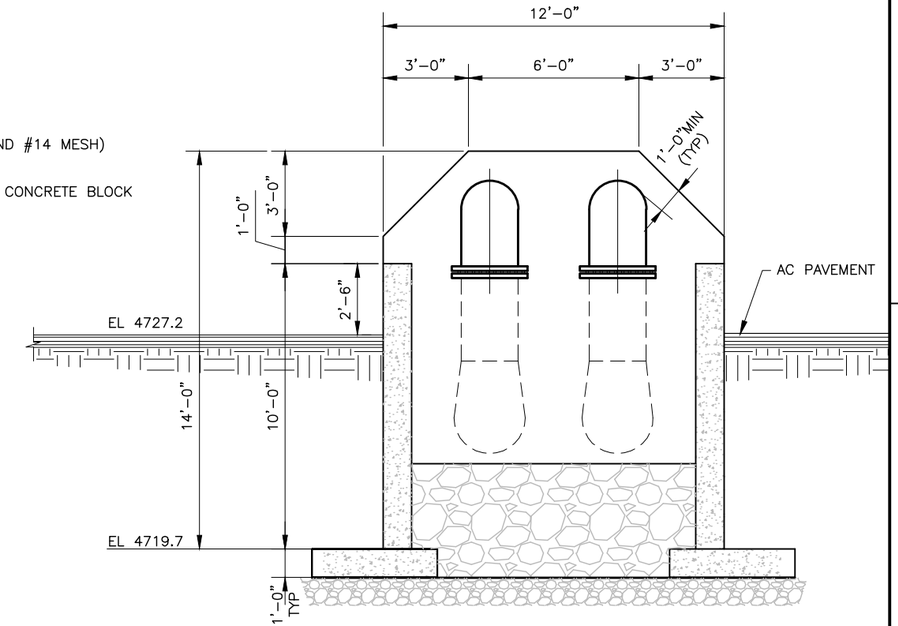
NOTES:

1. ATTACH TYPE 304 STN STL INSECT SCREEN (#4 AND #14 MESH) BETWEEN END FLANGES FLANGES.
2. SACK RUB FINISH SHALL BE APPLIED TO EXPOSED CONCRETE BLOCK



SECTION (A ---)

SCALE: 3/8"=1'-0"



SECTION (B ---)

SCALE: 3/8"=1'-0"

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN
DRAWN R. GARCIA
REVIEW M. COLLINS CHECKED
APPROVED J. LUETTINGER

JVWTP
BLOW-OFF STRUCTURE

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. PA-4

SHEET 63 OF 110

MECHANICAL EQUIPMENT SCHEDULE

AIR VALVE SCHEDULE

STATION	DRAWING NUMBER	VALVE NUMBER	ELEVATION	WORKING PRESSURE	TEST PRESSURE	AIR VALVE TYPE AND SIZE		APCO MODEL NO. (OR EQUAL)	AIR VALVE VENT PIPE DIAMETER	REMARKS
						CARV	ARV			
JVWTP INTERCONNECTION VAULT	M-2	JV-AV-01	4707.00	10	150		2"	NA	NA	GA INDUSTRIES, ARV-CW-900, NO EQUALS
JVWTP INTERCONNECTION VAULT	M-2	JV-AV-02	4707.00	10	150		2"	NA	NA	GA INDUSTRIES, ARV-CW-900, NO EQUALS
217+63	PP-2	JV-AV-03	4668.00	30	150	6"		1100A	6"	
233+90	PP-4	JV-AV-04	4620.00	50	150	6"		1100A	6"	
277+94	PP-08	JV-AV-05	4551.00	80	150	6"		1100A	6"	
293+88	PP-10	JV-AV-06	4542.00	80	150	6"		1100A	6"	
13400 S. MAINLINE VAULT	M-8	JV-AV-07	4549.25	80	150	10"		1100A	10"	
13400 S. MAINLINE VAULT	M-8	JV-AV-08	4549.25	80	150	10"		1100A	10"	
13400 S. MAINLINE VAULT	M-8	JV-AV-09	4549.25	80	150	6"		1100A	6"	

NOTES:
1. AIR VALVES SHALL BE RATED TO ACCOMODATE THE SPECIFIED WORKING AND TEST PRESSURES SHOWN AT EACH LOCATION.

VALVE SCHEDULE

VALVE NO.	LOCATION	TYPE	SIZE (IN)	WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)	OPERATOR	VOLTAGE	PHASE	DC BLOCKER REQUIRED (2)
BV 125	NOT USED (FUTURE)								
BV 126	JA-2 INTERCONN. VAULT	BUTTERFLY	72	10	150	ELECTRIC	460	THREE	YES
BV 127	JA-2 INTERCONN. VAULT	BUTTERFLY	72	10	150	ELECTRIC	460	THREE	YES
BV 128	JA-2 INTERCONN. VAULT	BUTTERFLY	78	10	150	ELECTRIC	460	THREE	YES
BV 129	JA-2 INTERCONN. VAULT	BUTTERFLY	78	10	150	ELECTRIC	460	THREE	YES
BV 130	JA-2 INTERCONN. VAULT	BUTTERFLY	12	10	150	MANUAL	NA	NA	NO
BV 131	JA-2 INTERCONN. VAULT	BUTTERFLY	12	10	150	MANUAL	NA	NA	NO
BV 132	JA-2 INTERCONN. VAULT	BUTTERFLY	24	10	150	MANUAL	NA	NA	NO
BV 133	JA-2 INTERCONN. VAULT	BUTTERFLY	24	10	150	MANUAL	NA	NA	NO
JV-BV-1	13400 S. MAINLINE VAULT	BUTTERFLY	8	80	150	MANUAL	NA	NA	NO
JV-BV-2	13400 S. MAINLINE VAULT	BUTTERFLY	8	80	150	MANUAL	NA	NA	NO
JV-BV-3	13400 S. MAINLINE VAULT	BUTTERFLY	8	80	150	MANUAL	NA	NA	NO
JV-BV-4	13400 S. MAINLINE VAULT	BUTTERFLY	36	80	150	ELECTRIC	460	THREE	YES
JV-BV-5	13400 S. MAINLINE VAULT	BUTTERFLY	48	80	150	ELECTRIC	460	THREE	YES
JV-BV-6	13400 S. MAINLINE VAULT	BUTTERFLY	48	80	150	ELECTRIC	460	THREE	YES
JV-BV-7	SWA - 13800 S. BLOWOFF	BUTTERFLY	8	85	150	MANUAL	NA	NA	NO
JV-BV-8	JA2 - 13800 S. BLOWOFF	BUTTERFLY	8	85	150	MANUAL	NA	NA	NO
JV-BV-9	RIVERTON PS AV/MW VAULT	BUTTERFLY	24	85	150	MANUAL	NA	NA	NO
JV-PV-1	13800 S. BLOWOFF PIPING	PLUG	8	85	150	MANUAL	NA	NA	NO
JV-PV-2	ROSE CREEK CROSSING	PLUG	14	80	150	MANUAL	NA	NA	NO
JV-GV-1	13400 S. MAINLINE VAULT	GATE	66	80	150	ELECTRIC	460	THREE	YES
JV-GV-2	SWA - ULDC BLOW-OFF AND INTERCONNECTION	GATE	14	75	150	MANUAL	NA	NA	NO
JV-GV-3	JA2 - ULDC BLOW-OFF AND INTERCONNECTION	GATE	14	75	150	MANUAL	NA	NA	NO
JV-GV-4	ROSE CREEK CROSSING	GATE	14	80	150	MANUAL	NA	NA	NO
JV-GV-6	14865 S. IRRIGATION PIPE	GATE	12	25	100	MANUAL	NA	NA	NO
JV-GV-7	14865 S. IRRIGATION PIPE	GATE	12	25	100	MANUAL	NA	NA	NO
JV-GV-8	14865 S. IRRIGATION PIPE	GATE	8	25	100	MANUAL	NA	NA	NO
JV-GV-9	14750 S. IRRIGATION PIPE	GATE	12	31	100	MANUAL	NA	NA	NO
JV-GV-10	VERA LN IRRIGATION PIPE	GATE	12	31	100	MANUAL	NA	NA	NO
JV-GV-11	15000 S. IRRIGATION PIPE	GATE	12	25	100	MANUAL	NA	NA	NO
JV-GV-12	15000 S. IRRIGATION PIPE	GATE	12	25	100	MANUAL	NA	NA	NO
JV-GV-13	15000 S. IRRIGATION PIPE	GATE	12	25	100	MANUAL	NA	NA	NO

PUMP SCHEDULE

PUMP NO.	LOCATION	SERVICE	TYPE	DISCHARGE SIZE (IN)	MAX FLOW (GPM)	MAX HEAD (FT)	VOLTAGE	PHASE	HERTZ	HP (MIN)	PUMP MODEL NO.	REMARKS
JV-SP-01	JA-2 INTERCONN. VAULT	RAW WATER	SUMP PUMP	2	50	40	120	1	60	0.5	HSZ2.4S-62	TSURUMI PUMP
JV-SP-02	METER VAULT	RAW WATER	SUMP PUMP	2	50	40	120	1	60	0.5	HSZ2.4S-62	TSURUMI PUMP
JV-SP-03	13400 S. MAINLINE VAULT	RAW WATER	SUMP PUMP	2	50	40	120	1	60	0.5	HSZ2.4S-62	TSURUMI PUMP

NOTES: REFER TO SPECIFICATION SECTION 11149- SUBMERSIBLE SUMP PUMPS FOR FURTHER INFORMATION.

EXHAUST FAN SCHEDULE

FAN NO.	VAULT	AIRFLOW (ACFM) AT 5,000 FT	ESP INCHES WC	DRIVE	MOTOR			COOK FAN MODEL (OR EQUAL)
					HP	VOLTS	PHASE	
JV-EF-01	JA-2 INTERCONN. VAULT	2500	0.25	DIRECT	0.50	120	SINGLE	16CV11D
JV-EF-02	JA-2 INTERCONN. VAULT	2500	0.25	DIRECT	0.50	120	SINGLE	16CV11D
JV-EF-03	METER VAULT	1400	0.25	DIRECT	0.33	120	SINGLE	12CV17D
JV-EF-04	13400 S. MAINLINE VAULT	2800	0.25	DIRECT	0.50	120	SINGLE	16CV11D

NOTES: REFER TO SECTION 15500 - HEATING, VENTILATING, AND AIR CONDITIONING FOR FURTHER INFORMATION.

METER SCHEDULE

METER NO.	LOCATION	TYPE	SIZE (IN)	REMARKS
JV-M-1	METER VAULT	MAGNETIC FLOW METER	78	ENDRESS-HAUSER PROMAG 53W OR ROSEMOUNT,8750 FLOWTUBE
JV-M-2	METER VAULT	MAGNETIC FLOW METER	66	ENDRESS-HAUSER PROMAG 53W OR ROSEMOUNT,8750 FLOWTUBE

NOTES: REFER TO SECTION 15075 - METERS, GENERAL

NOTES:

1. JVWCD IS PROVIDING (3) REFURBISHED 72" DIA BUTTERFLY VALVES FOR THE PROJECT. SHOP DRAWINGS FOR THESE VALVES ARE INCLUDED WITH THE REFERENCE DRAWINGS IN THIS DRAWING SET. THE OWNER PROVIDED BUTTERFLY VALVES ARE IN STORAGE AT THE JVWTP AND WILL BE AVAILABLE FOR THE PROJECT BY SEPTEMBER 1, 2010.
2. PROVIDE DC BLOCKER AT ALL ELECTRICAL VALVE OPERATORS, SEE 9 C-12

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

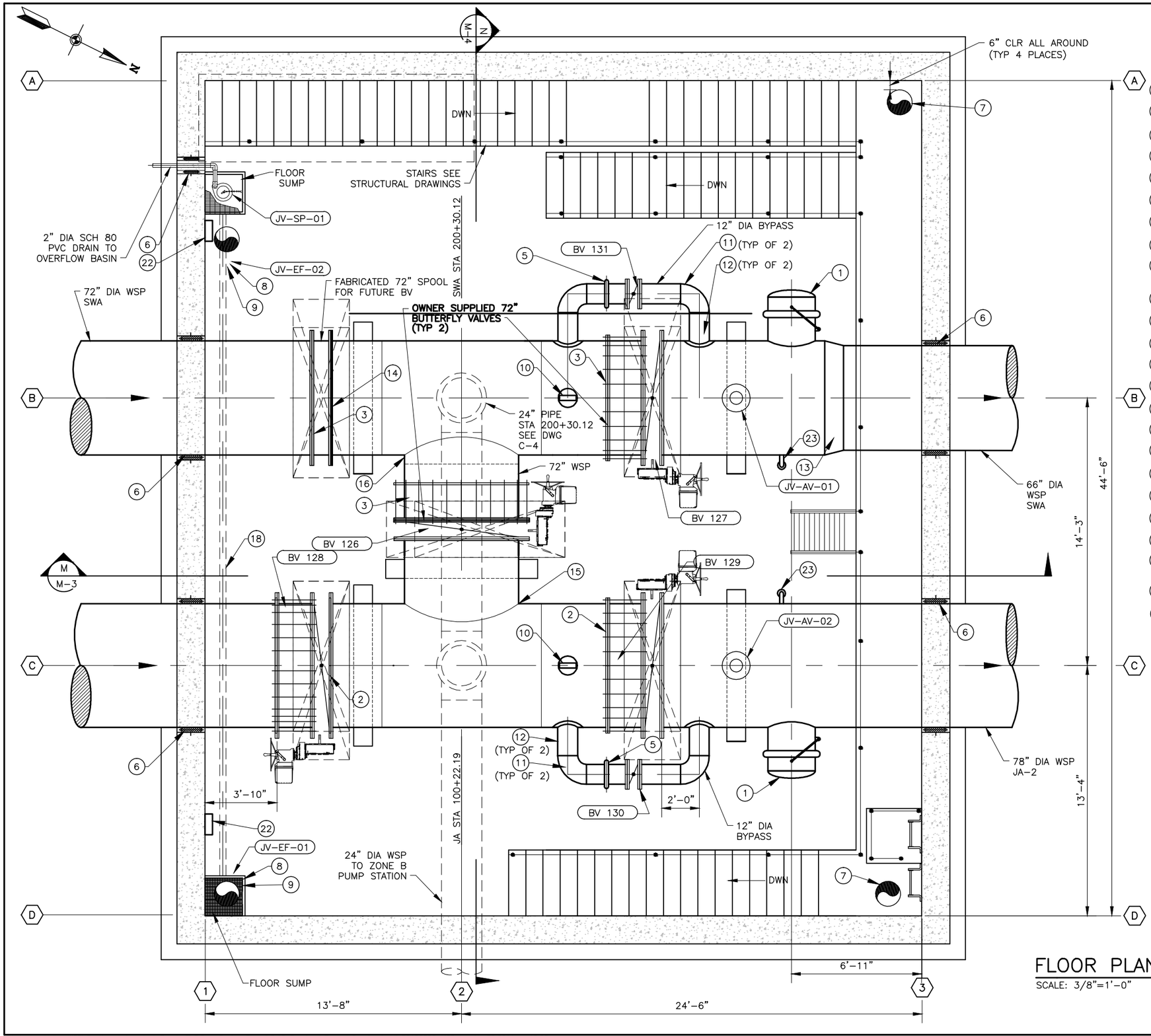
REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER
DESIGN DESIGN T. OLSEN DRAWN R. GARCIA

MECHANICAL EQUIPMENT SCHEDULES

PROJECT NUMBER 010-08-03
DATE: FEBRUARY 2010

DRAWING NO. M-1
SHEET 64 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M01.dwg Nov30,2011 - 12:23pm



MATERIAL SCHEDULE

1. 30" DIA MANWAY ACCESS (M 3013)
2. 78" DIA RESTRAINED DISMANTLING JOINT
3. 72" DIA RESTRAINED DISMANTLING JOINT
4. 24" DIA GROOVED MECHANICAL COUPLING
5. 12" DIA GROOVED MECHANICAL COUPLING
6. SLEEVE PIPE OPENING (S 4005) METHOD "A"
7. 16" DIA SCH 40 STEEL INLET PIPE WITH END CUT AT 45°
8. 16" DIA SCH 80 PVC EXHAUST PIPE
9. WALL MOUNTED IN LINE EXHAUST FAN (M 3007)
10. 2" PRESSURE GAUGE ASSEMBLY (M 3012)
11. 12" DIA WSP 90° BEND
12. 12" DIA PE WSP OUTLET
13. 72"X66" REDUCER
14. 72" DIA INSULATING FLANGE (M 3002)
15. 78"X78"X72" WSP TEE
16. 72"X72"X72" WSP TEE
17. SEEP RING
18. 4" SCH 80 PVC DRAIN PIPE
19. 24" DIA WSP 90° BEND
20. 24"X24"X24" WSP TEE
21. 24" DIA RESTRAINED FLEXIBLE COUPLINGS
22. HOSE RACK, SEE (M 3017)
23. SAMPLE TAP, SEE (M 3018)
24. GROOVED MECHANICAL COUPLING

NOTE:

1. OWNER WILL PROVIDE (3) 72" CLASS 300 BUTTERFLY VALVES FOR INSTALLATION BY THE CONTRACTOR. THE CONTRACTOR SHALL PURCHASE AND INSTALL NEW ACTUATORS FOR THESE (3) OWNER PROVIDED VALVES.
2. SEE DWG M-1 FOR MECHANICAL SCHEDULES

FLOOR PLAN (L / C-1)
SCALE: 3/8"=1'-0"

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

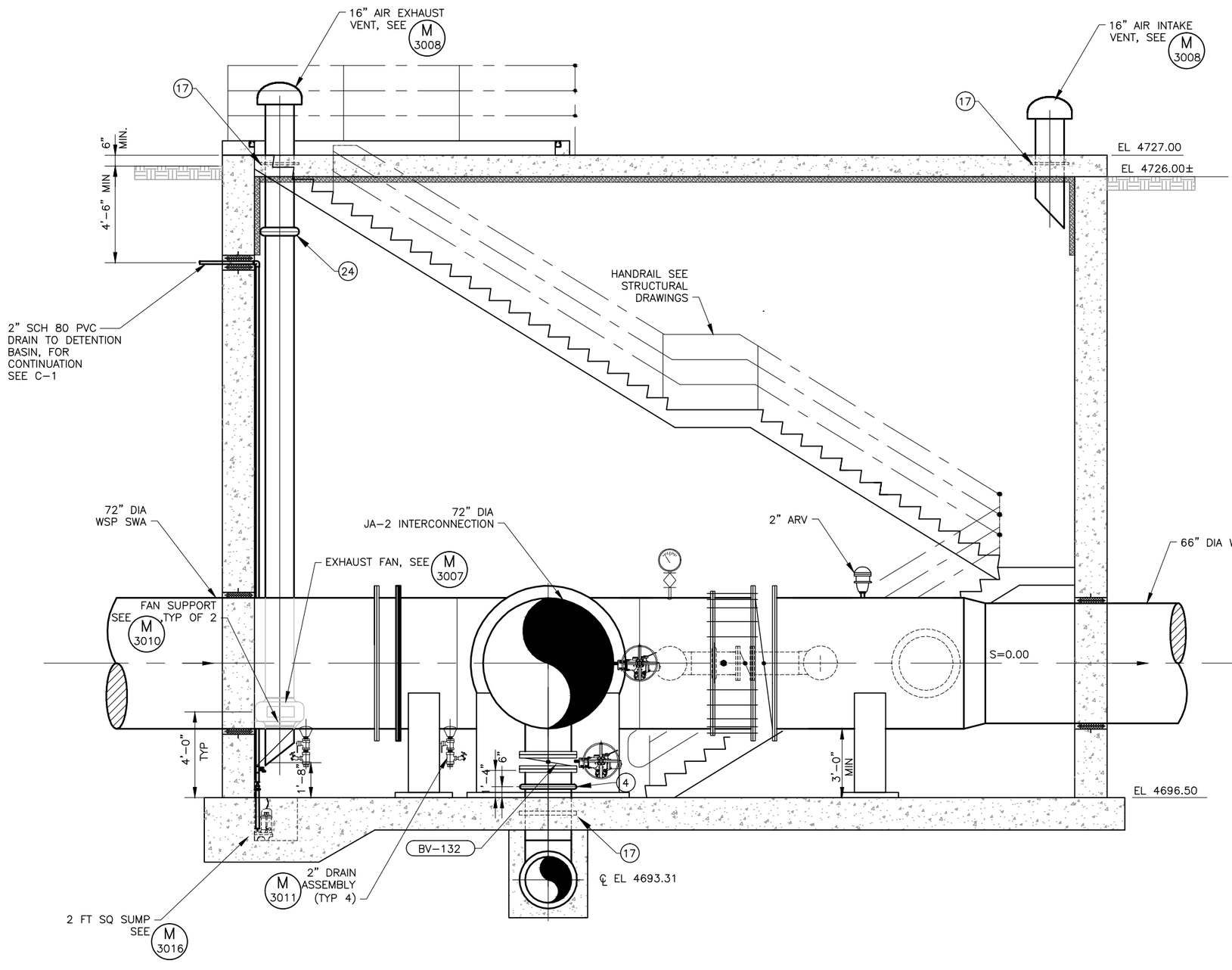
DESIGN T. OLSEN
DRAWN R. GARCIA
REVIEW M. COLLINS
CHECKED J. LUETTINGER
APPROVED

JVWTP INTERCONNECTION VAULT - PLAN

PROJECT NUMBER 010-08-03
DATE: FEBRUARY 2010

DRAWING NO. M-2
SHEET 65 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M02.dwg Nov30,2011 - 12:25pm



SECTION M

SCALE: 3/8"=1'-0" — M-2

NOTES:

1. ALL INTERIOR VAULT PIPE AND FITTINGS SHALL BE CEMENT MORTAR LINED STEEL PIPE, AND COATED IN ACCORDANCE WITH SECTION 09900 – PAINTING UNLESS OTHER WISE NOTED.
2. PROVIDE MINIMUM OF 1'–0" CLR SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENT PRIOR TO FABRICATION.
3. COAT INTERIOR FLOOR OF VAULT AND CONCRETE STAIRS WITH NON–SKID PROTECTIVE COATING IN ACCORDANCE WITH SECTION 09900 – COATING AND PAINTING. EXTEND COATING ON WALLS TO AN ELEVATION OF 1'–6" ABOVE FLOOR.
4. REFER TO ELECTRICAL DWGS FOR LIGHTING PLAN AND POWER AND CONTROL PLANS FOR VAULT.
5. REFER TO STRUCTURAL DWGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION AND REINFORCED CONCRETE VAULT CONSTRUCTION.
6. REFER TO DRAWING M–2 FOR MATERIAL SCHEDULE.

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN R. GARCIA

REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

JVWTP INTERCONNECTION VAULT – SECTION

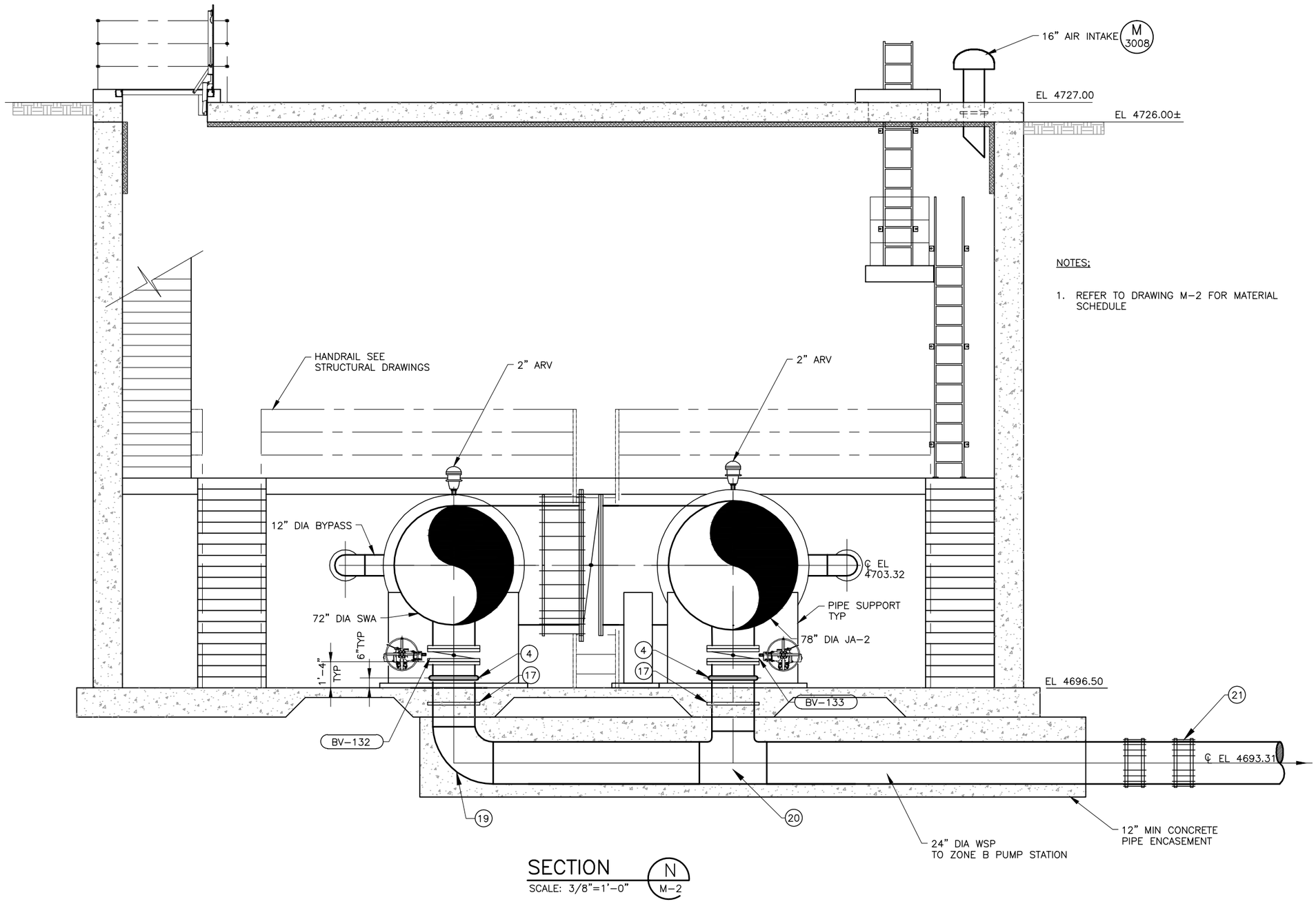
PROJECT NUMBER 010-08-03

DATE: FEBRUARY 2010

DRAWING NO. M–3

SHEET 66 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M03.dwg Nov30,2011 – 12:26pm



NOTES:

1. REFER TO DRAWING M-2 FOR MATERIAL SCHEDULE

SECTION

SCALE: 3/8"=1'-0"

N
M-2

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN
DESIGN R. GARCIA
DRAWN
REVIEW
CHECKED M. COLLINS
APPROVED J. LUETTINGER

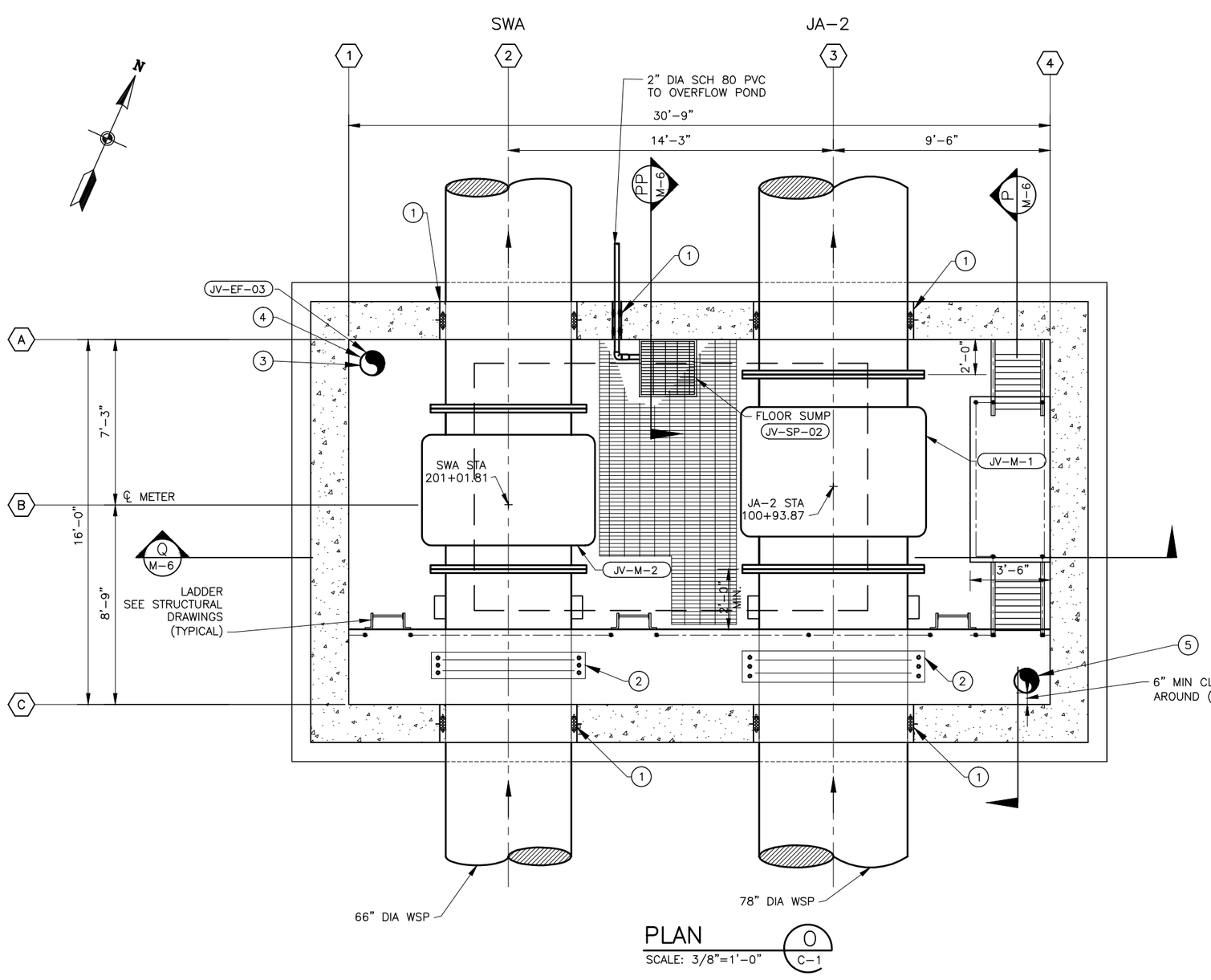
JVWTP INTERCONNECTION VAULT - SECTION

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. M-4

SHEET 67 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M04.dwg Nov30,2011 - 12:31pm



PLAN
SCALE: 3/8"=1'–0"
0 C–1

MATERIAL SCHEDULE

1. SLEEVE PIPE OPENING. SEE S 4005 METHOD 'A"
2. DEPEND–O–LOCK FxF RESTRAINED COUPLING
3. WALL MOUNTED INLINE EXHAUST FAN, SEE..... M 3007
4. 12" SCH 80 PVC AIR EXHAUST PIPE CUT AT 45° 12" FROM BOTTOM OF FLOOR.
5. 12" SCH 40 STEEL AIR INTAKE PIPE CUT AT 45° (HIGH)

NOTES:

1. ALL INTERIOR VAULT PIPE AND FITTING SHALL BE CEMENT MORTAR LINED STEEL PIPE, AND COATED IN ACCORDANCE WITH SECTION 09900 – PAINTING UNLESS OTHERWISE NOTED.
2. PROVIDE MINIMUM OF 1'–0" CLR SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF DIMENSIONAL FIT–UP OF PIPING. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENT PRIOR TO FABRICATION.
3. COAT INTERIOR FLOOR OF VAULT WITH NON–SKID PROTECTIVE COATING IN ACCORDANCE WITH SECTION 09900 – COATING AND PAINTING. EXTEND COATING ON WALLS TO AN ELEVATION OF 1'–6" ABOVE FLOOR.
4. REFER TO ELECTRICAL DWGS FOR LIGHTING PLAN AND POWER AND CONTROL PLANS FOR VAULT.
5. REFER TO STRUCTURAL DWGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION AND REINFORCED CONCRETE VAULT CONSTRUCTION.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

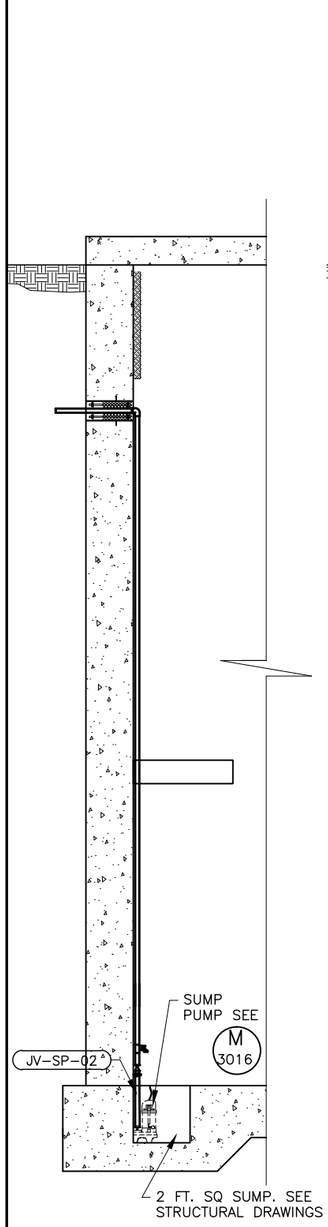
DESIGN T. OLSEN
DRAWN R. GARCIA
REVIEW CHECKED M. COLLINS
APPROVED J. LUETTINGER

METER VAULT – PLAN

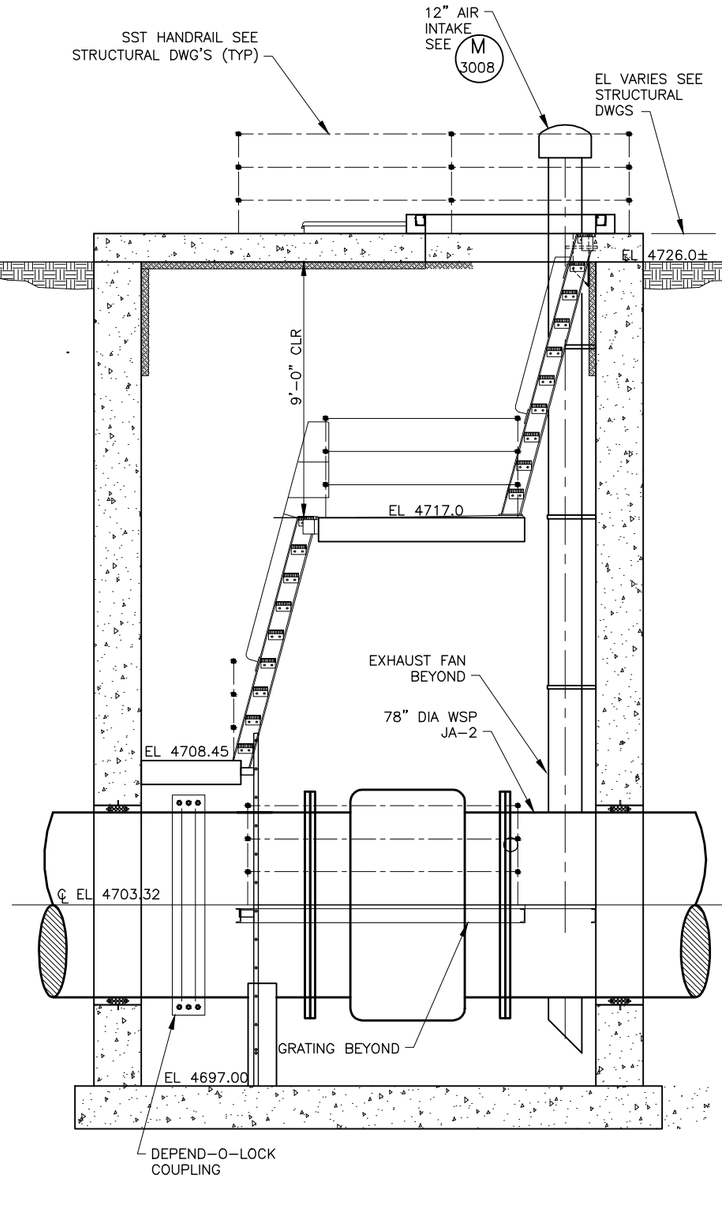
DATE: FEBRUARY 2010
PROJECT NUMBER 010–08–03

DRAWING NO. M–5
SHEET 68 OF 110

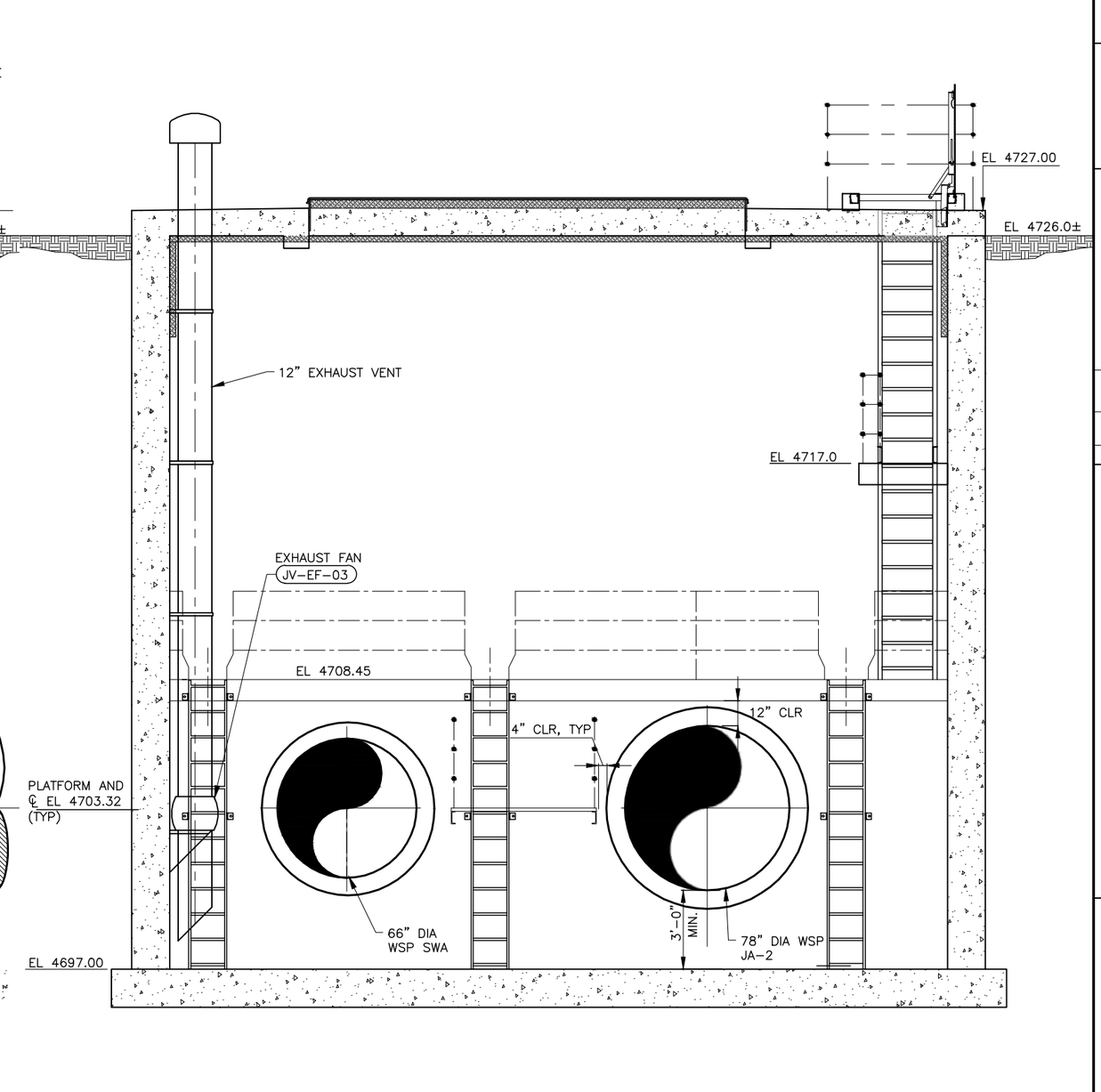
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M05.dwg Nov16,2011 – 9:07am



SECTION PP
SCALE: 3/8"=1'-0"
M-5



SECTION P
SCALE: 3/8"=1'-0"
M-5



SECTION Q
SCALE: 3/8"=1'-0"
M-5

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

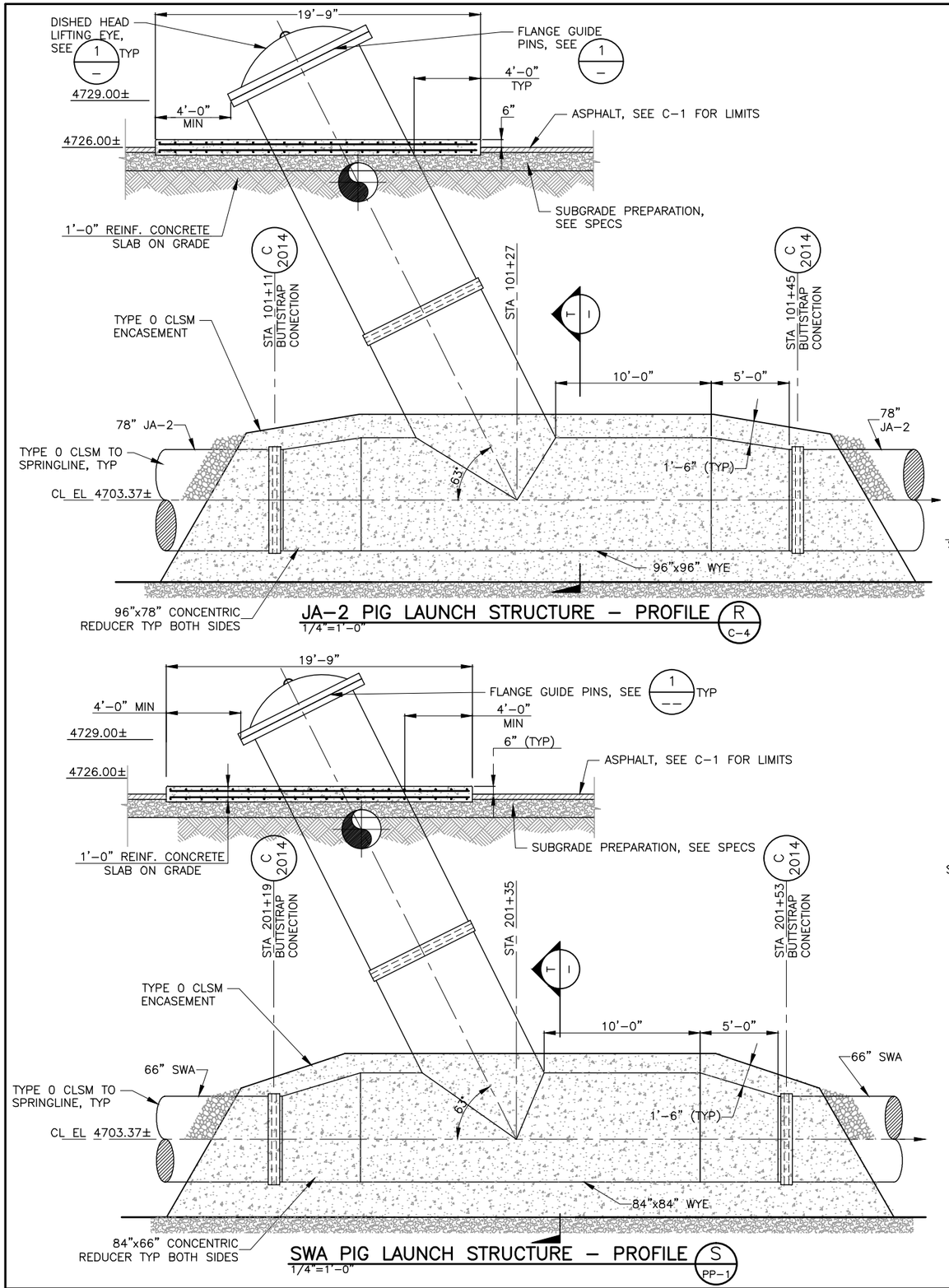
DESIGN T. OLSEN DRAWN R. GARCIA
REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

METER VAULT SECTIONS

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. M-6
SHEET 69 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M06.dwg Nov30,2011 – 12:43pm

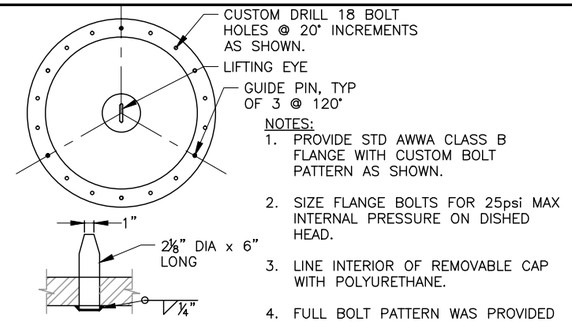


JA-2 PIG LAUNCH STRUCTURE – PROFILE (R / C-4)

1/4"=1'-0"

SWA PIG LAUNCH STRUCTURE – PROFILE (S / PP-1)

1/4"=1'-0"

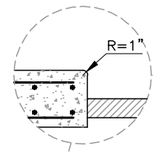


NOTES:

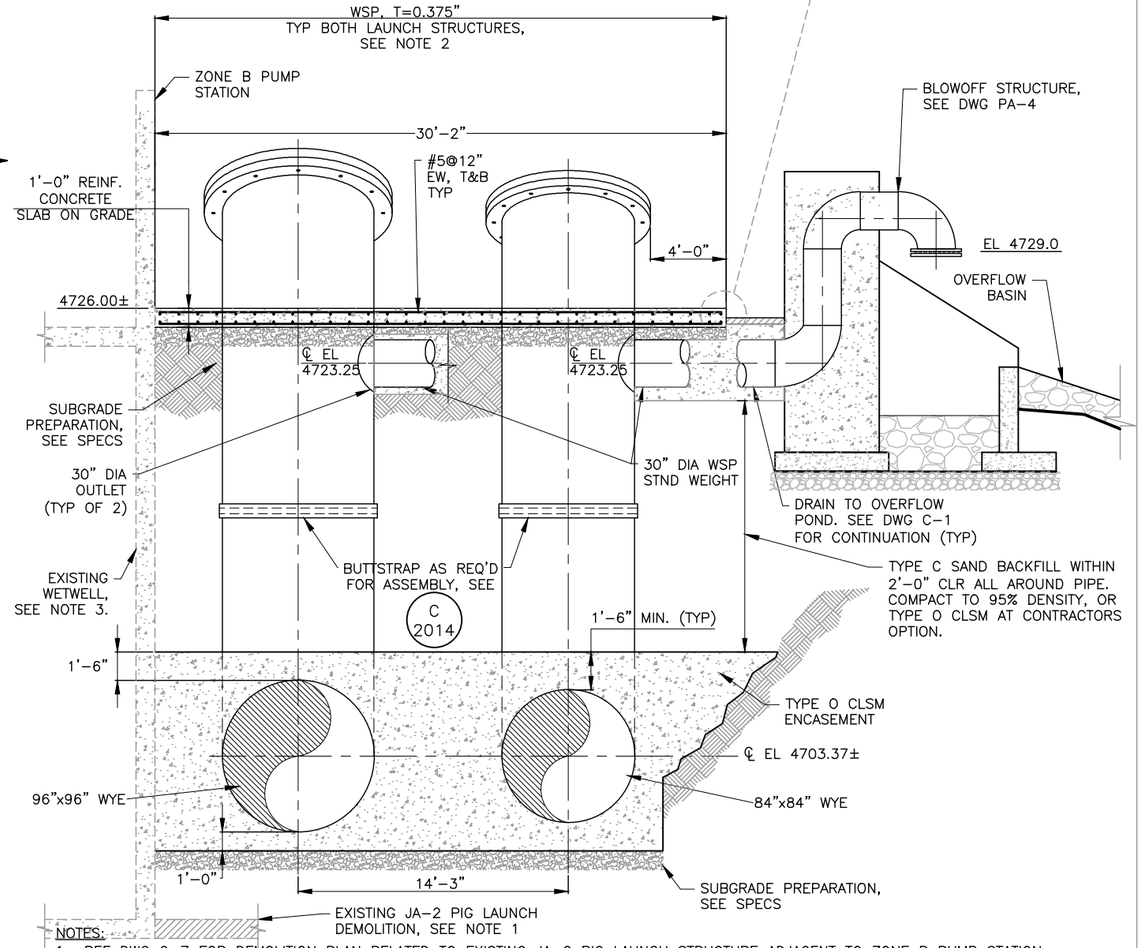
1. PROVIDE STD AWWA CLASS B FLANGE WITH CUSTOM BOLT PATTERN AS SHOWN.
2. SIZE FLANGE BOLTS FOR 25psi MAX INTERNAL PRESSURE ON DISHED HEAD.
3. LINE INTERIOR OF REMOVABLE CAP WITH POLYURETHANE.
4. FULL BOLT PATTERN WAS PROVIDED FOR 78"ø DISHED HEAD.

TYPICAL PIG LAUNCH FLANGE BOLT PATTERN (1 / –)

1/4"=1'-0"



CORNER ROUND, TYP (2 / –)



NOTES:

1. REF DWG C-7 FOR DEMOLITION PLAN RELATED TO EXISTING JA-2 PIG LAUNCH STRUCTURE ADJACENT TO ZONE B PUMP STATION.
2. ALL STEEL PIPE AND SPECIAL FITTINGS REQUIRED FOR BOTH LAUNCH STRUCTURES SHALL BE 0.375–INCH WALL, MIN.
3. PLACE CLSM IN MAXIMUM 3'–0" LIFTS TO LIMIT FLUID PRESSURE LOADING AROUND EXISTING PUMP STATION WETWELL WALL

SWA AND JA-2 PIG LAUNCH STRUCTURE – SECTION (T / C-1)

1/4"=1'-0"

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN
DRAWN R. GARCIA DRAWN
REVIEW CHECKED M. COLLINS
APPROVED J. LUETTINGER

SWA AND JA-2 PIG LAUNCH STRUCTURES

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. M-7

SHEET 70 OF 110

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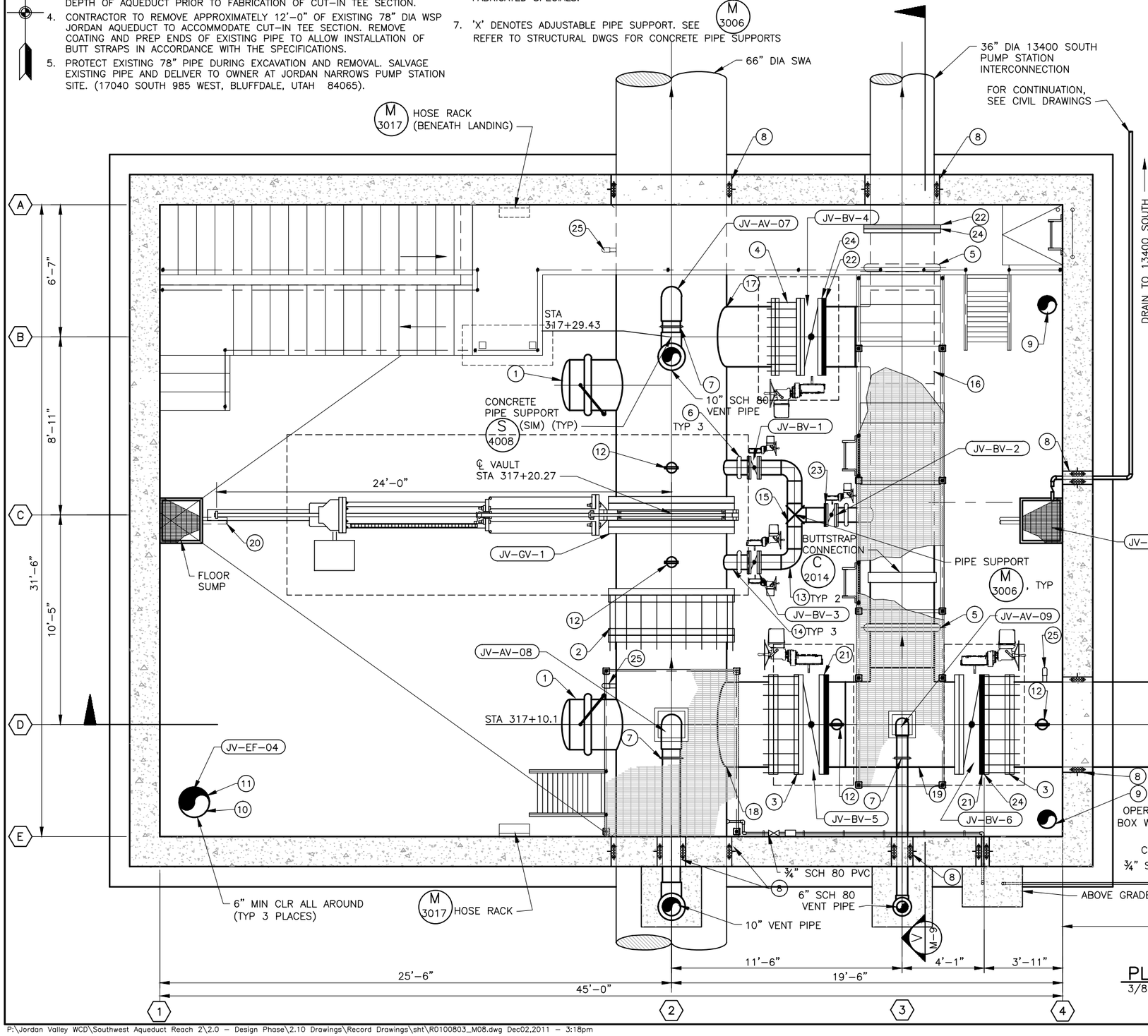
NOTES:

1. ALL INTERNAL VAULT PIPING AND FITTINGS SHALL BE CEMENT MORTAR LINED AND COATED IN ACCORDANCE WITH SECTION 09900 OF THE SPECIFICATIONS.
2. ALL FITTINGS, VALVES, AND FLANGES SHALL BE CLASS 150 PSI UNLESS OTHERWISE NOTED.
3. CONTRACTOR TO POTHOLE AND VERIFY SIZE, LOCATIONS OF JOINTS, AND DEPTH OF AQUEDUCT PRIOR TO FABRICATION OF CUT-IN TEE SECTION.
4. CONTRACTOR TO REMOVE APPROXIMATELY 12'-0" OF EXISTING 78" DIA WSP JORDAN AQUEDUCT TO ACCOMMODATE CUT-IN TEE SECTION. REMOVE COATING AND PREP ENDS OF EXISTING PIPE TO ALLOW INSTALLATION OF BUTT STRAPS IN ACCORDANCE WITH THE SPECIFICATIONS.
5. PROTECT EXISTING 78" PIPE DURING EXCAVATION AND REMOVAL. SALVAGE EXISTING PIPE AND DELIVER TO OWNER AT JORDAN NARROWS PUMP STATION SITE. (17040 SOUTH 985 WEST, BLUFFDALE, UTAH 84065).
6. ENGINEER WILL ACCEPT ALTERNATE CONNECTION METHOD TO JORDAN AQUEDUCT TO INCLUDE A 48-INCH PIPE SADDLE WITH REINFORCED COLLAR PLATE IN LIEU OF BUTT-STRAPPED TEE FITTING AT CONTRACTOR'S OPTION. SUBMIT DETAILS OF PROPOSED CONNECTION FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION. ALL FABRICATION MUST MEET CURRENT AWWA STEEL PIPE STANDARDS AND THE REQUIREMENTS OF SECTION 02752-STEEL PIPE FABRICATED SPECIALS.
7. 'X' DENOTES ADJUSTABLE PIPE SUPPORT. SEE (M 3006) REFER TO STRUCTURAL DWGS FOR CONCRETE PIPE SUPPORTS
8. FOR SCHEDULE CONSTRAINTS ASSOCIATED WITH CONNECTION TO THE JORDAN AQUEDUCT, REFER TO SECTION 01010.
9. SEE DWG M-1 FOR MECHANICAL SCHEDULES



MATERIAL SCHEDULE

1. 30" DIA MANWAY ACCESS, SEE (M 3013)
2. 66" DIA RESTRAINED DISMANTLING JOINT
3. 48" DIA RESTRAINED DISMANTLING JOINT
4. 36" DIA RESTRAINED DISMANTLING JOINT
5. 36" DIA GROOVED MECHANICAL COUPLING
6. 8" DIA GROOVED MECHANICAL COUPLING
7. GROOVED MECHANICAL COUPLING
8. SLEEVE PIPE OPENINGS, SEE (S 4005) METHOD 'A'
9. 12" DIA SCH 40 STEEL INLET PIPE WITH END CUT @ 45°
10. 16" DIA SCH 80 PVC EXHAUST PIPE
11. WALL MOUNTED INLINE EXHAUST FAN, SEE (M 3007)
12. 2" PRESSURE GAUGE ASSEMBLY, SEE (M 3012)
13. 8" DIA WSP 90° BEND
14. 8" GROOVED END OUTLET
15. 8" X 8" X 8" TEE
16. 36" X 36" X 36" TEE
17. 66" X 66" X 36" TEE
18. 66" X 66" X 48" TEE
19. 48" X 48" X 36" TEE
20. 4" SCH 80 PVC DRAIN PIPE
21. 48" DIA INSULATING FLANGE, SEE (M 3002)
22. 36" DIA INSULATING FLANGE, SEE..... (M 3002)
23. 8" DIA INSULATING FLANGE, SEE (M 3002)
24. DC BLOCKER, SEE (8 C-12)
25. SMOOTH NOSE SAMPLE TAP, SEE (M 3018)

PLAN
3/8" = 1'-0"
(U C-3)

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

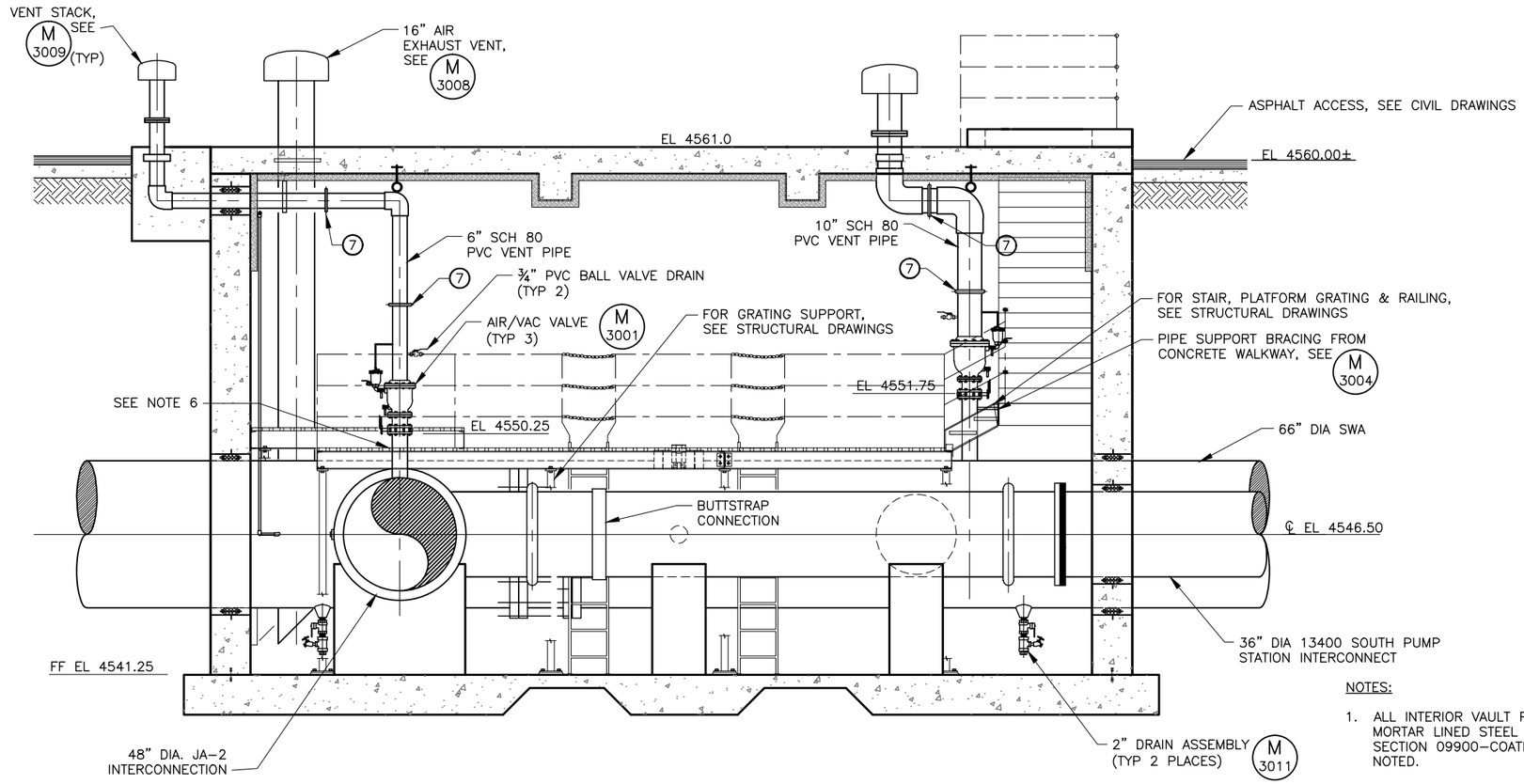
DESIGN T. OLSEN
DRAWN R. GARCIA
REVIEW M. COLLINS
CHECKED J. LUETTINGER
APPROVED

MECHANICAL
13400 SOUTH MAINLINE VALVE AND INTERCONNECTION VAULT - PLAN

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. M-8
SHEET 71 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M08.dwg Dec02,2011 - 3:18pm



SECTION V M-8
3/8"=1'-0"

NOTES:

1. ALL INTERIOR VAULT PIPE AND FITTINGS SHALL BE CEMENT MORTAR LINED STEEL PIPE, AND COATED IN ACCORDANCE WITH SECTION 09900–COATING AND PAINTING UNLESS OTHERWISE NOTED.
2. PROVIDE MINIMUM OF 1'–0" CLEARANCE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF DIMENSIONAL FIT–UP OF PIPING, NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENT PRIOR TO FABRICATION.
3. COAT INTERIOR FLOOR OF VAULT AND CONCRETE STAIRS WITH NON–SKID PROTECTIVE COATING IN ACCORDANCE WITH SECTION 09900–COATING AND PAINTING. EXTEND COATING IN WALLS TO AN ELEVATION OF 1'–6" ABOVE FLOOR.
4. REFER TO ELECTRICAL DRAWINGS FOR LIGHTING PLAN AND POWER AND CONTROL PLANS FOR VAULT.
5. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION AND REINFORCED CONCRETE VAULT CONSTRUCTION.
6. CONTRACTOR SHALL NOTCH GRATING FOR 6" AIR VALVE PENETRATION.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN
DRAWN P. COLOSIMO DRAWN
REVIEW M. COLLINS CHECKED
APPROVED J. LEUTTINGER

MECHANICAL
13400 SOUTH MAINLINE VALVE AND INTERCONNECT VAULT – SECTION

DATE: FEBRUARY 2010
PROJECT NUMBER 010–08–03

DRAWING NO. M–9
SHEET 72 OF 110

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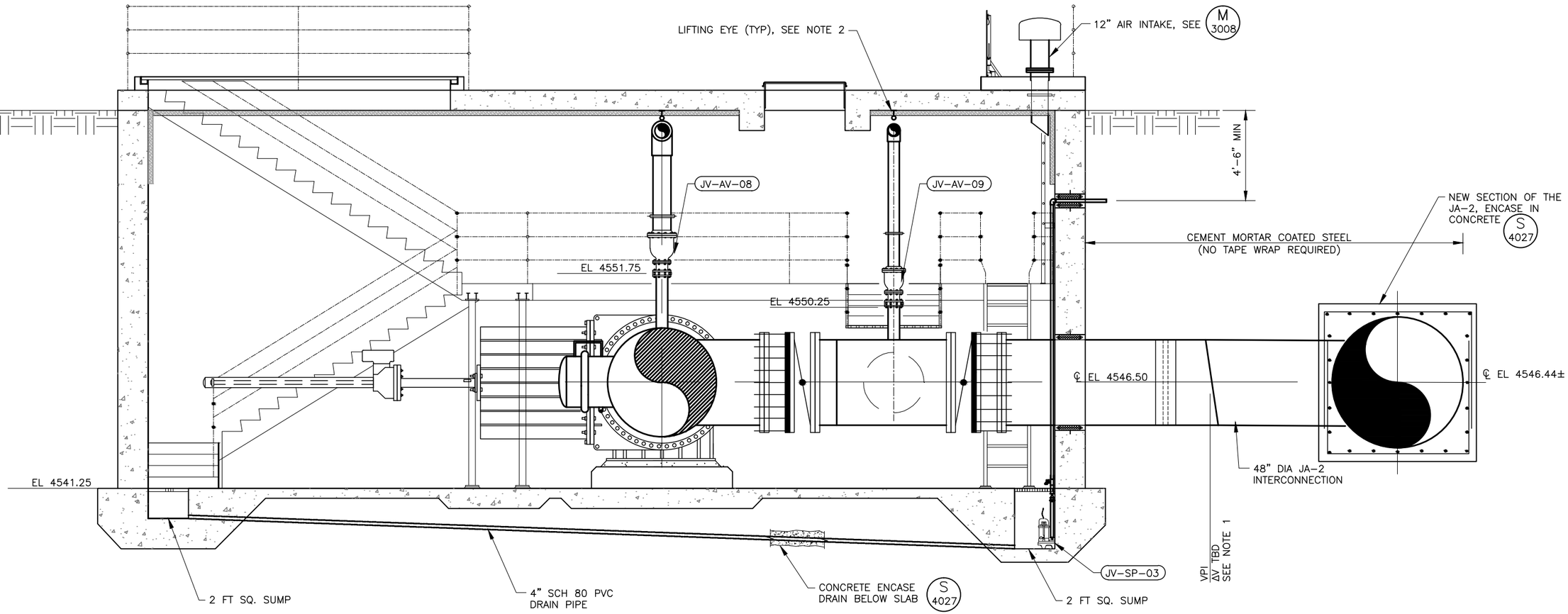

SECTION W M-8
3/8"=1'-0"

NOTE:

1. CONTRACTOR SHALL POTHOLE EXISTING 78" DIA. JA-2 AND COORDINATE LOCATION PRIOR TO FABRICATION OF THE SPECIAL FITTING.
2. CONTRACTOR SHALL INSTALL LIFTING EYE ABOVE ALL AIR VALVES. SEE S 4023 (TYP 3)

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

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SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN
DRAWN P. COLOSIMO
REVIEW M. COLLINS CHECKED
APPROVED J. LUETTINGER

MECHANICAL
13400 SOUTH MAINLINE VALVE AND INTERCONNECT VAULT - SECTION

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. M-10
SHEET 73 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M10.dwg Nov30,2011 - 1:11pm

N

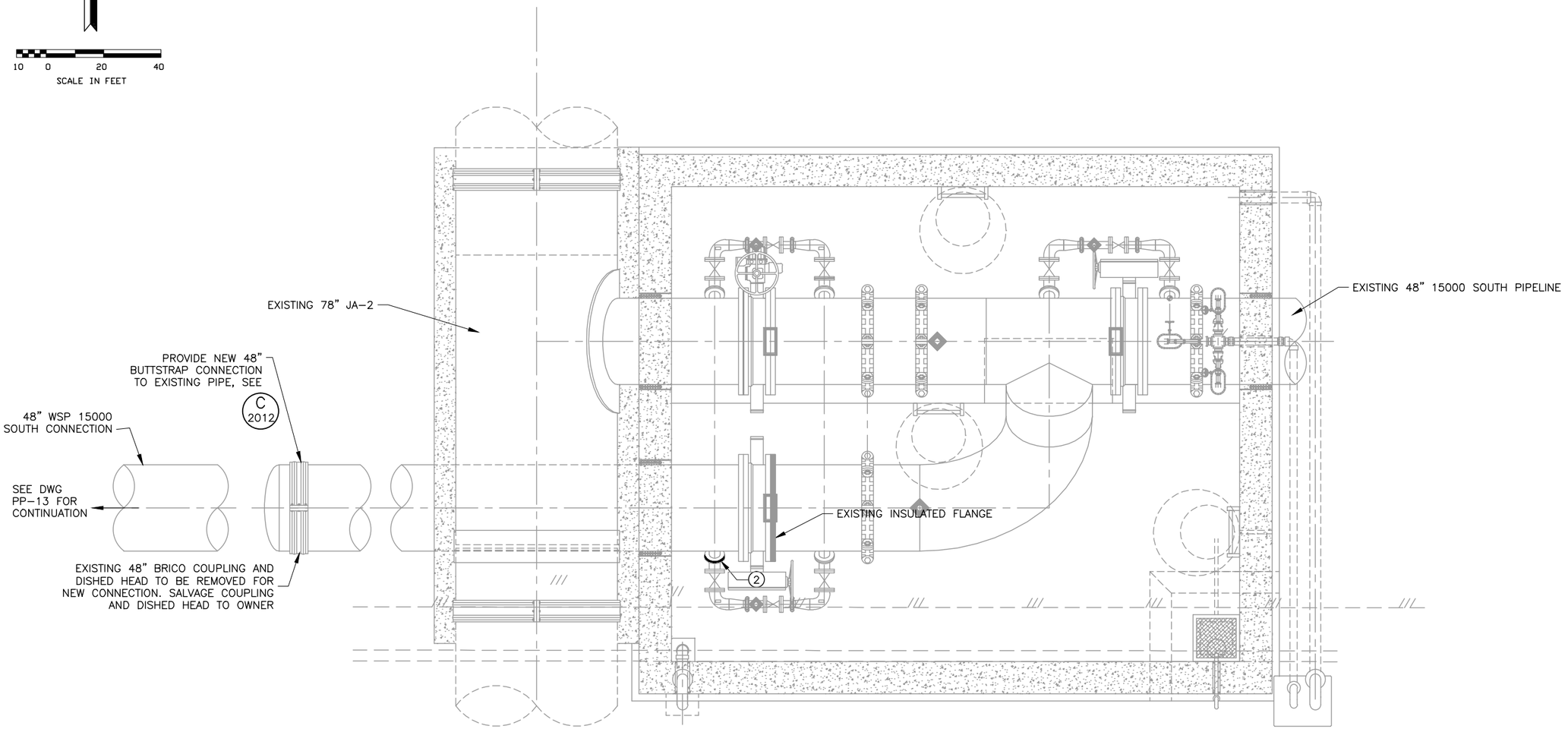
10 0 20 40

SCALE IN FEET

MATERIAL SCHEDULE

(1) 48" INSULATING FLANGE, SEE (M 3002)

(2) 6" INSULATING FLANGE, SEE (M 3002)



15000 SOUTH CONNECTION VAULT (X PP-13)

NOTES:

1. CONTRACTOR TO INSTALL INSULATING FLANGES IN 48" AND 6" PIPES, INCLUDING DISASSEMBLY AND REASSEMBLY OF PIPING AS REQUIRED.
2. COORDINATE SCHEDULE FOR MODIFICATIONS TO VAULT WITH OWNER PRIOR TO CONSTRUCTION

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN

DRAWN P. COLOSIMO

REVIEW M. COLLINS CHECKED

APPROVED J. LUETTINGER

15000 SOUTH VAULT INSULATION PLAN

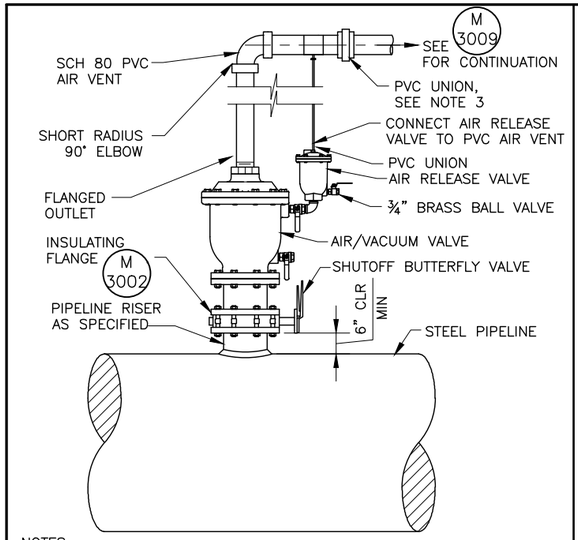
DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. M-11

SHEET 74 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_M11.dwg Nov16,2011 - 9:56am



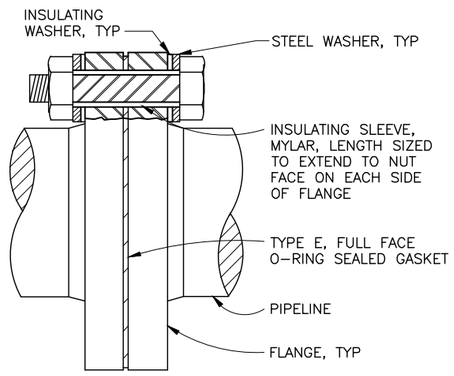
NOTES:

1. SIZE OF ALL VALVES AND PIPING TO MATCH AIR VALVE.
2. PIPE MATERIAL AS SHOWN ON PLANS.
3. USE PVC UNION FOR SMALL DIAMETERS 4" AND LESS. PROVIDE GROOVED MECHANICAL COUPLING ON PIPE DIAMETERS 6" AND LARGER FOR DISASSEMBLY.
4. ALL THREADED HOSE BIBS SHALL HAVE HOSE BIB VACUUM BREAKERS.

COMBINATION AIR VALVE DETAIL

NTS

M 3001



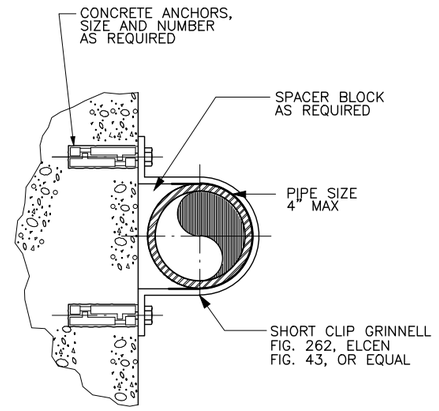
NOTES:

1. ABOVE GRADE ISULATING FLANGE INSTALLATION SHOWN.
2. FOR BURIED OR SUBMERGED INSULATING FLANGE INSTALLATION DO NOT INSTALL INSULATING WASHER ON PROTECTED SIDE OF INSULATING FLANGE.
3. COAT BURIED OR SUBMERGED INSULATING FLANGES WITH PRIMER AND FILLER MASTIC AFTER ASSEMBLING JOINT AND WRAP WITH BUTYL RUBBER ADHESIVE, POLYETHYLENE TAPE.
4. TEST COMPLETED JOINT FOR ELECTRICAL ISOLATION AND REPAIR AS REQUIRED.

INSULATING FLANGE

NTS

M 3002



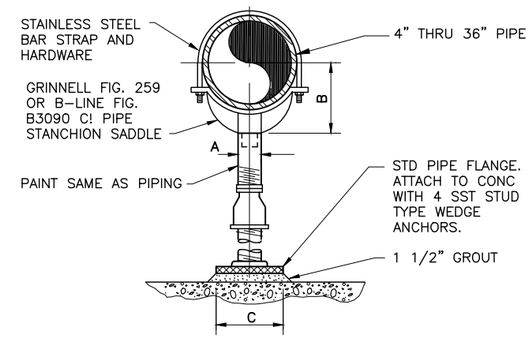
NOTES:

1. PIPE SUPPORT AND HARDWARE SHALL BE STAINLESS STEEL.
2. BUTYL RUBBER INSULATION SHALL BE PROVIDE BETWEEN PIPE AND SUPPORT FOR ALL INSTALLATIONS INVOLVING STEEL PIPE.

PIPE SUPPORT

NTS (≤ 4" DIAMETER)

M 3003



DIMENSION TABLE			
PIPE SIZE	A	B	C
12"	3"	9-15/16"	9"
16"	4"	12-3/8"	11"
18"	4"	13-7/8"	11"
24"	6"	17-15/16"	13-½"
30"	6"	21-5/16"	13-½"

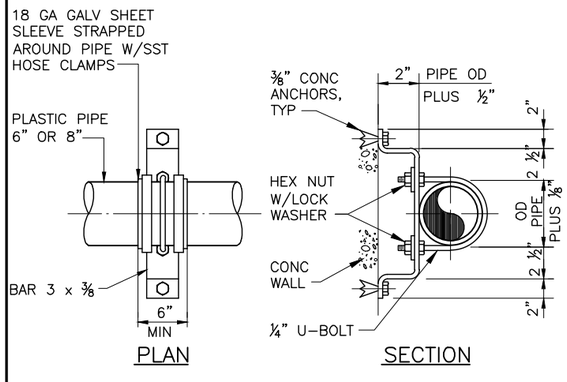
NOTES:

1. PROVIDE HALF ROUND RIGID INSULATION AND INSULATION PROTECTION SHIELD, SIMILAR TO GRINNELL FIGURE 167 OR ELCEN FIGURE 219, WHERE PIPING IS INSULATED.
2. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, SIMILAR TO MASON TYPE 'W' OR KORFUND WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.
3. FOR BASE, HEIGHT AND FLANGE DIMENSIONS, SEE TABLE.
4. BUTYL RUBBER INSULATION SHALL BE PROVIDE BETWEEN PIPE AND SUPPORT FOR ALL INSTALLATIONS INVOLVING STEEL PIPE.
5. REFERENCE STRUCTURE DETAILS FOR CONCRETE PIPE SUPPORTS WHERE REQUIRED.

ADJUSTABLE PIPE SUPPORT

NTS

M 3006



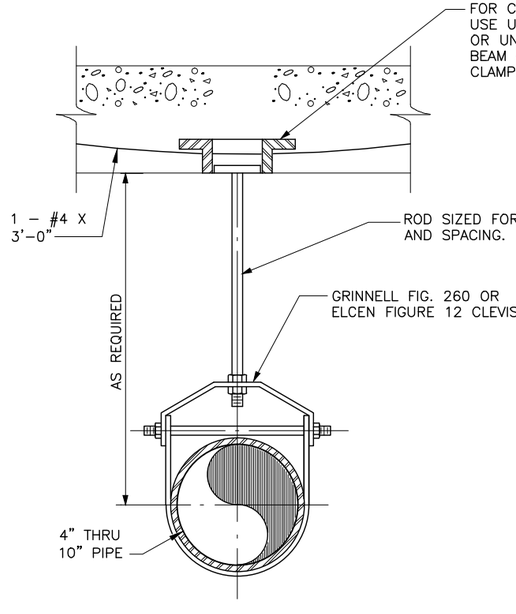
NOTES:

1. PIPE SUPPORT AND HARDWARE SHALL BE STAINLESS STEEL.
2. BUTYL RUBBER INSULATION SHALL BE PROVIDE BETWEEN PIPE AND SUPPORT FOR ALL INSTALLATIONS INVOLVING STEEL PIPE.

PIPE SUPPORT

NTS (> 4" DIAMETER)

M 3004



NOTES:

1. FOR INSULATED PIPES. USE GRINNELL FIG. 167 OR ELCEN FIGURE 219 INSULATION PROTECTION SHIELD.
2. TOTAL LOADING ON EACH CONCRETE INSERT OR OTHER TYPE HANGER ROD ANCHOR SHALL NOT EXCEED MFR'S RECOMMENDED LOADINGS.
3. PIPE SUPPORT AND HARDWARE SHALL BE STAINLESS STEEL.
4. BUTYL RUBBER INSULATION SHALL BE PROVIDE BETWEEN PIPE AND SUPPORT FOR ALL INSTALLATIONS INVOLVING STEEL PIPE.

PIPE HANGER RODS AND SUPPORT SPACING					
PIPE DIA. (INCHES)	ROD DIA. (INCHES)	MAX SUPPORT SPACING (FEET)		WEIGHT LIMIT (LBS.)	
		STL. PIPE	C.I. PIPE	TYPE 'A'	TYPE 'B'
1 & SMALLER	3/8	6	5	610	1700
1 ¼ TO 2	3/8	9	5	610	1700
2 ½ TO 3 ½	1/2	12	5	1130	3200
4 TO 5	5/8	14	5	1430	3800
6 TO 8	3/4	16	5	1430	3800
10 TO 12	7/8	18	--	1430	3800
14 TO 16	1	20	--	1430	3800

PIPE HANGER

NTS

M 3005

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED M. COLLINS APPROVED J. LUETTINGER

DESIGN DESIGN T. OLSEN DRAWN B. ABEL

GENERAL MECHANICAL DETAILS - 1

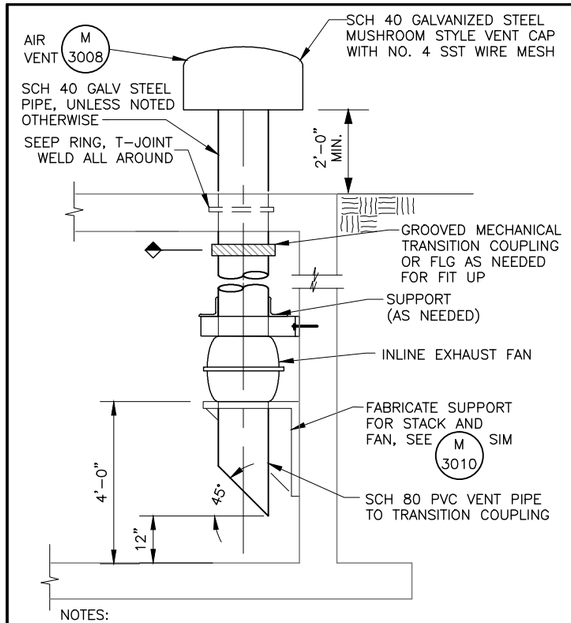
PROJECT NUMBER 010-08-03

DATE: FEBRUARY 2010

DRAWING NO. GM-1

SHEET 75 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GM01.dwg Nov16,2011 - 10:00am



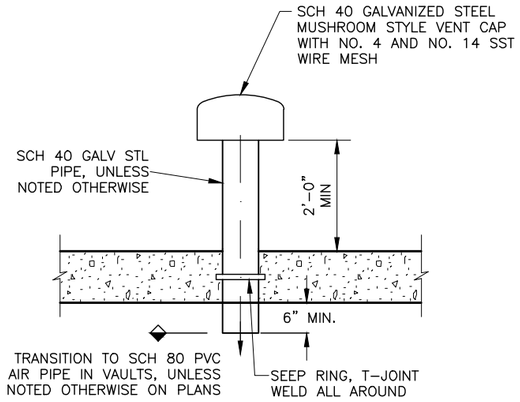
NOTES:

1. ALL ABOVE GROUND PIPING SHALL BE HOT DIP GALVANIZED.
2. VENT PIPING SHALL BE A MINIMUM 8" DIAMETER, SEE MECHANICAL DWGS FOR ACTUAL SIZES

EXHAUST VENT DETAIL

NTS

M 3007



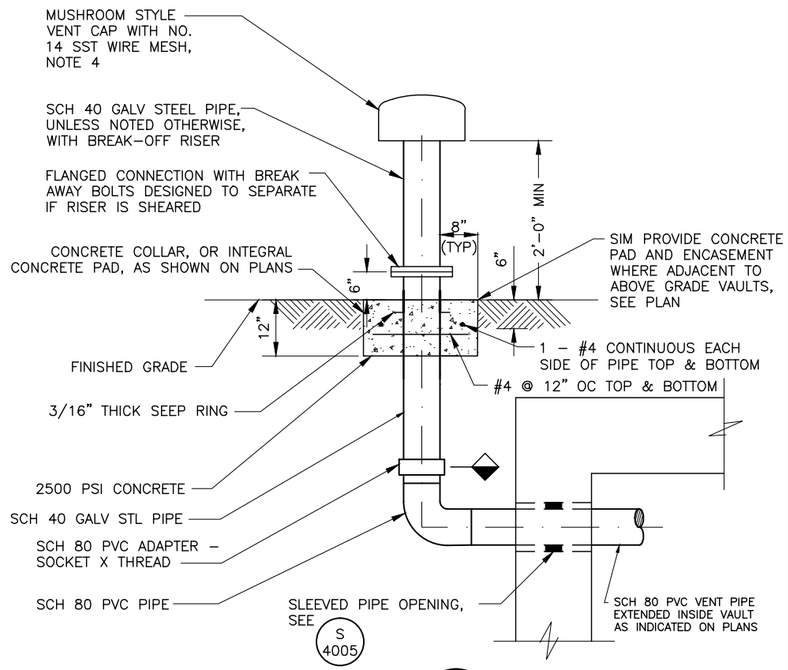
AIR INTAKE VENT

NTS

M 3008

NOTES:

1. WELD ALL STEEL FITTINGS EXCEPT MATCHING BOLT ON FLANGE.
2. ALL ABOVE GRADE STL PIPING SHALL BE HOT DIP GALVANIZED. BOLTS, NUTS, AND WASHERS SHALL BE SST
3. VENT CAP FOR PIPELINE AIR VALVES MUST MEET STATE DRINKING WATER STANDARDS. ENGINEER MAY REQUIRE SUBSTITUTION WITH STANDARD GOOSNECK STYLE VENT IF SUPPLIER DOES NOT MEET STATE REQUIREMENTS.
4. VENT PIPING SHALL BE A MINIMUM 8" DIAMETER, SEE MECHANICAL DRAWINGS FOR ACTUAL SIZE.



VENT STACK

NTS

M 3009

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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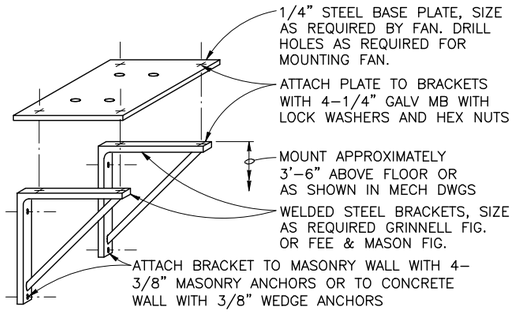
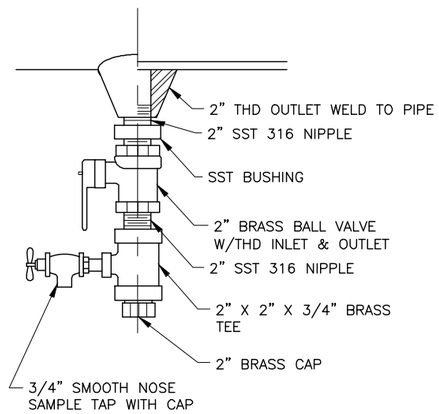


NOTE:
HOT DIP GALVANIZE ENTIRE ASSEMBLY AFTER FABRICATION.

FAN SUPPORT

NTS

M 3010



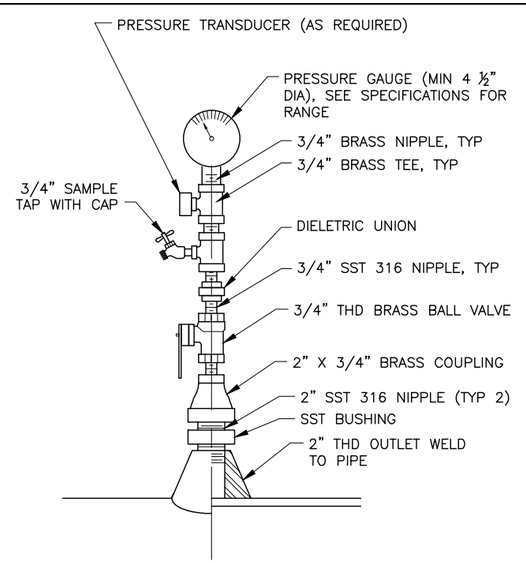
NOTES:

1. ALL THREADED HOSE BIBS SHALL HAVE HOSE BIB VACUUM BREAKERS.

2" DRAIN ASSEMBLY

NTS

M 3011

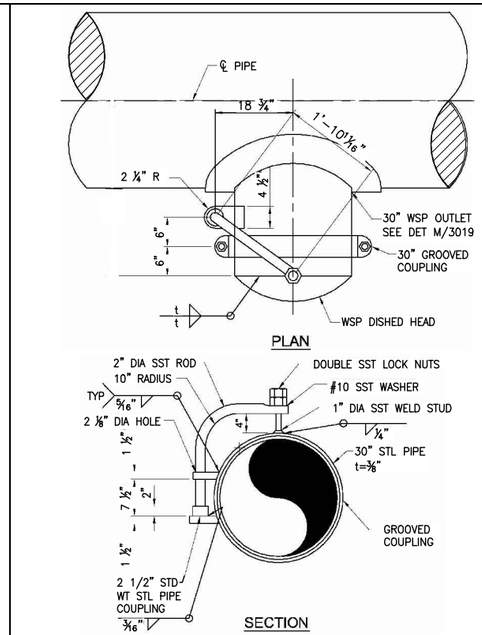


NOTES:

1. INSTALL PRESSURE SWITCH ONLY AS REQUIRED IN DRAWINGS. WHERE NO PRESSURE TRANSDUCER IS REQUIRED, DELETE THE ACCOMPANYING TEE AND NIPPLES.
2. CALIBRATE GAGE IN APPLICABLE UNITS. SEE SPECIFICATIONS.

2" PRESSURE GAUGE ASSEMBLY

M 3012



NOTE:
EPOXY PAINT ALL NON–STAINLESS STEEL EXPOSED METAL WITH APPROPRIATE PIPE COATING SYSTEM PER SECTION 09910 – PIPELINE COATINGS.

30" DIA HINGED ACCESS MANWAY

NTS

M 3013

Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN T. OLSEN
DRAWN B. ABEL
REVIEW CHECKED M. COLLINS
APPROVED J. LUETTINGER

GENERAL MECHANICAL DETAILS – 2

PROJECT NUMBER 010–08–03
DATE: FEBRUARY 2010

DRAWING NO. GM–2
SHEET 76 OF 110

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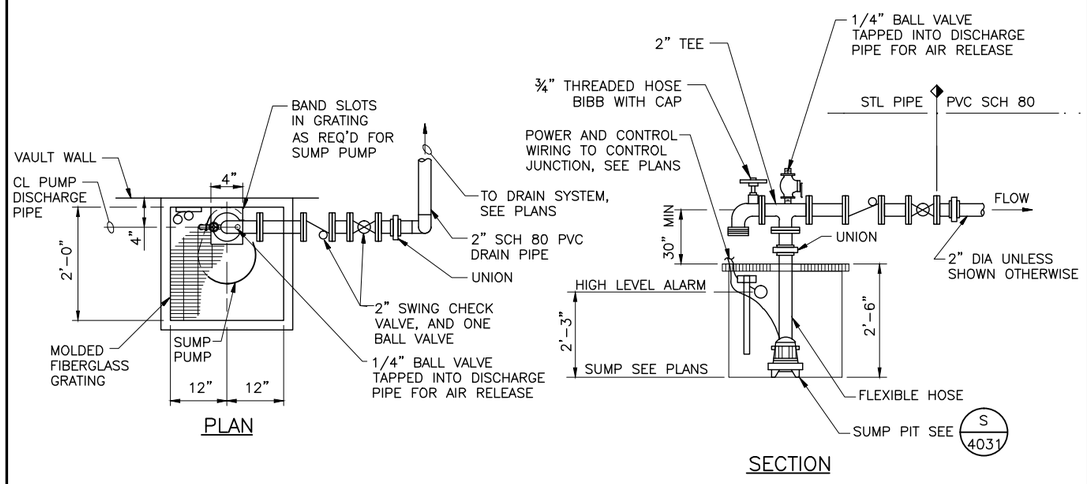
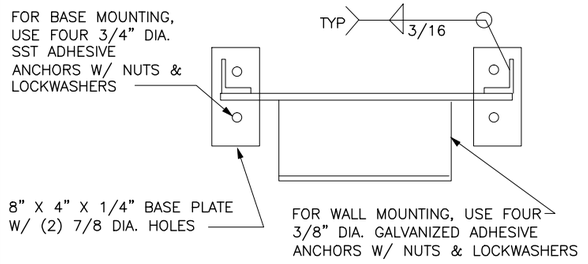
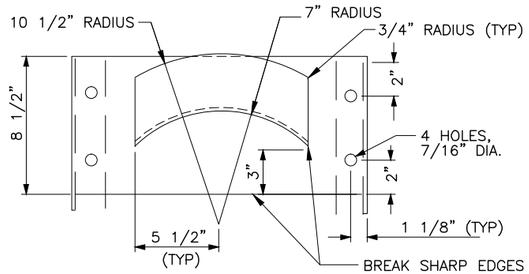


SUMP PUMP DETAILS

NTS

M 3016





NOTES:

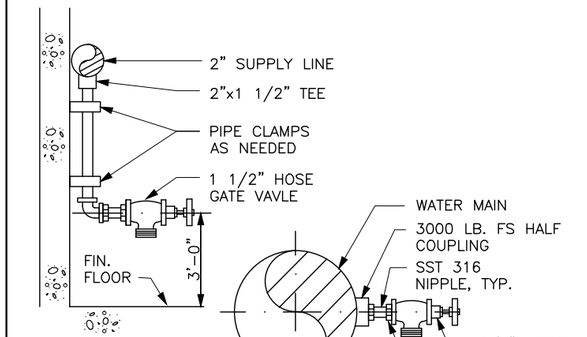
1. WHERE HOSE RACK IS FREE-STANDING, PROVIDE (2) STL. 2 X 2 X 1/4" BASE PLATES. (OMIT BASE PLATES WHERE ANGLES CAN BE SET IN CONCRETE.)

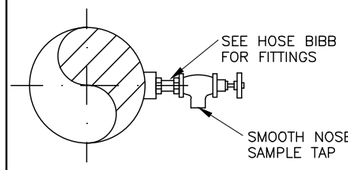
2. CONSTRUCTION: B GA. STEEL SHEET, ALL WELDED, GALVANIZED AFTER FABRICATION.

HOSE RACK

NTS

M 3017





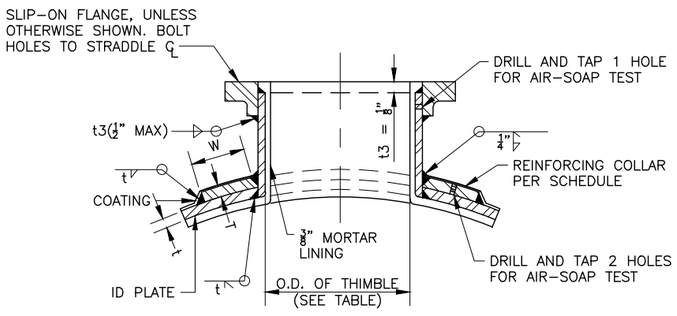
NOTE:

1. FOR SIZE AND LOCATION SEE DRAWINGS.
2. ALL THREADED HOSE BIBS SHALL HAVE HOSE BIB VACUUM BREAKERS.

HOSE BIBBS AND SAMPLE TAPS

NTS

M 3018



NOTES:

1. ALL FITTINGS, VALVES AND FLANGES TO BE CLASS 150 PSI UNLESS OTHER WISE NOTED.

2. ALL INTERIOR VAULT PIPING AND FITTINGS ARE TO BE CEMENT MORTAR LINED, AND COATED W/SYSTEM 10 PER SPECS UNLESS OTHERWISE NOTED.

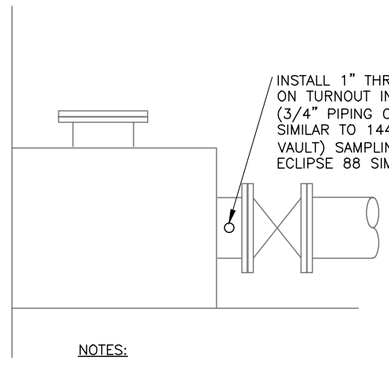
OUTLET / RISER REINFORCING COLLAR DATA

NOMINAL SIZE	SCHEDULE PIPE	t3 WALL THICKNESS (IN)	O.D. THIMBLE (IN)	COLLAR DIMENSIONS	
				W (IN)	T (IN)
4	STD	0.280	4 5/8	3	SEE SPECS.
6	STD	0.280	6 5/8	3	
8	STD	0.322	8 5/8	4	
12	STD	0.375	12 3/4	6	
16	STD	0.375	16	8	
24	STD	0.375	24	12	
30	STD	0.375	30	15	

OUTLET DETAIL

NTS

M 3019



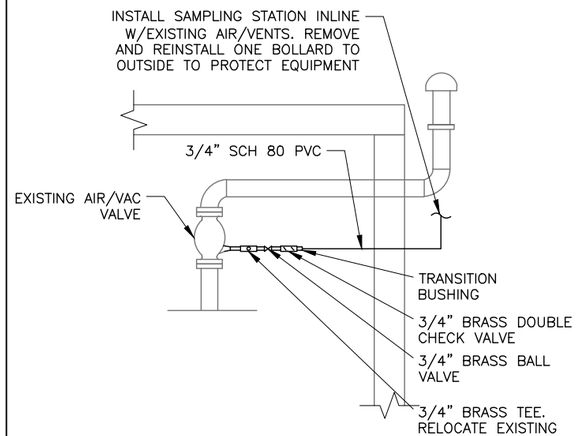
NOTES:

1. PIPING SHALL BE ROUTED UP THRU ROOF SLAB AND THE SAMPLING STATION MOUNTED ON CONCRETE HOUSEKEEPING PAD ON TOP OF VAULT.

EXISTING JA-2 TURN OUT VAULT AT 14400 SO.

NTS

M 3020



EXISTING VISTA MEADOWS 14400 SO SWA VAULT

NTS

M 3021

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN T. OLSEN DESIGN
DRAWN B. ABEL DRAWN
REVIEW M. COLLINS CHECKED
APPROVED J. LUETTINGER

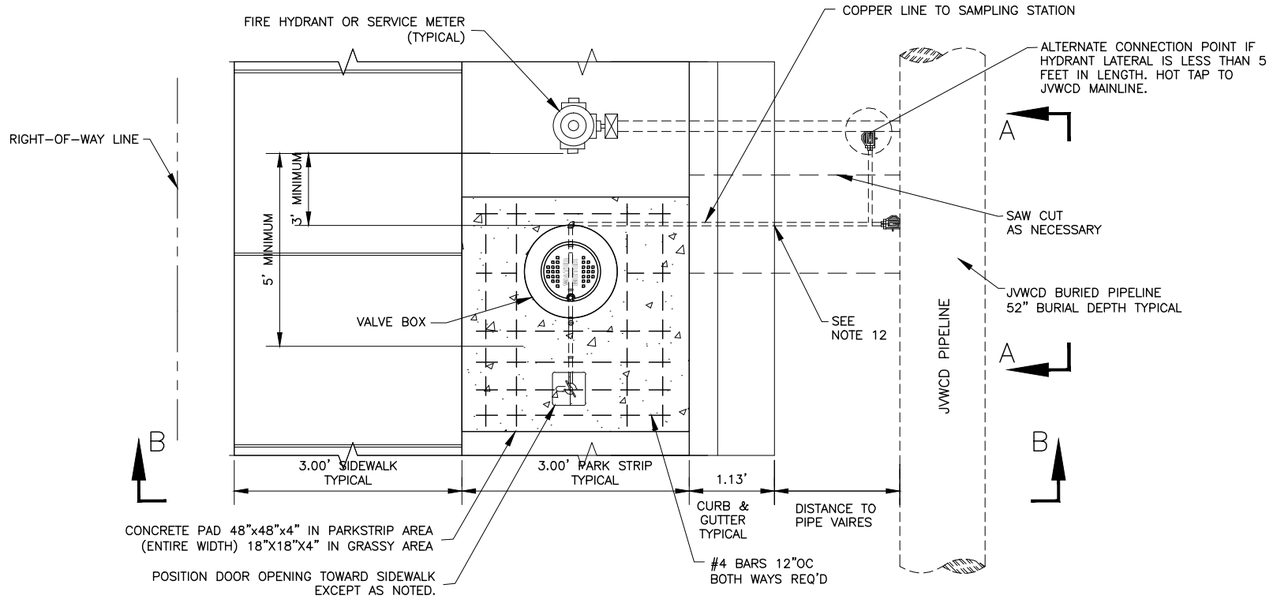
GENERAL MECHANICAL DETAILS - 3

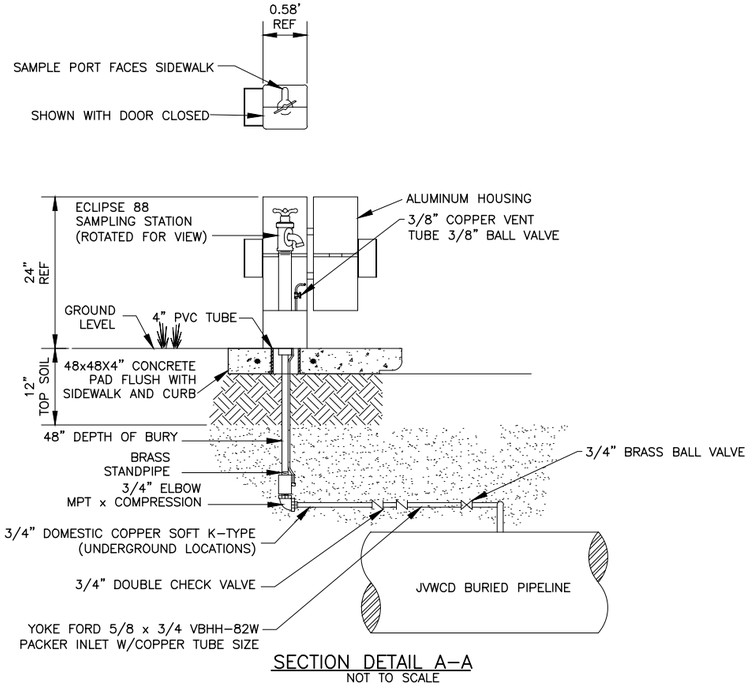
DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. GM-3

SHEET 77 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GM03.dwg Dec28,2011 - 8:50am





SECTION DETAIL A-A
NOT TO SCALE

TYPICAL SAMPLE TAP DETAIL
NTS

M 3020

PROJECT SPECIFIC NOTES – WATER QUALITY SAMPLING STATIONS:

1) A REPRESENTATIVE FROM THE OWNER MUST BE PRESENT DURING EACH HOT TAP TO THE OWNERS WATER LINES. 24 HOUR ADVANCE WRITTEN NOTICE TO THE OWNER OF "INTENT TO HOT TAP" IS REQUIRED. NOTICE IS TO INCLUDE THE ADDRESS AND TIME OF HOT TAPING OPERATION IS REQUIRED. SYSTEM PRESSURE RANGES FROM 50–150 PSI.

2) PENETRATIONS TO THE OWNERS WATER LINES ARE TO BE DONE WITH THE WATER LINE IN SERVICE (I.E. HOT TAP). BEST PRACTICES MUST BE USED DURING THIS OPERATION TO INSURE THE BACTERIOLOGICAL QUALITY AND STRUCTURAL INTEGRITY OF THE OWNERS WATER LINES.

3) SAMPLE TAPS ARE LOCATED AT 3 PLACES ON THE PROJECT.
–EXISTING 14400 SOUTH VAULT (VISTA MEADOWS), SEE M/3021
–EXISTING JA–2 TURNOUT VAULT AT 14400 SOUTH, SEE M/3020
–13400 SOUTH MAINLINE VALVE AND INTERCONNECTION VAULT, SEE DWG. M–8

4) POSITION SAMPLING STATION SQUARE TO THE ROAD.

5) DISINFECTION OF SAMPLING LINE IS THE RESPONSIBILITY OF THE CONTRACTOR. OWNER WILL BE RESPONSIBLE FOR BACTERIOLOGICAL TESTING.

6) THE CONTRACTOR MUST PROVIDE A SECURITY PADLOCK AT EACH SAMPLING STATION UNTIL BENEFICIAL USE IS TAKEN BY THE OWNER. AT THE TIME OF BENEFICIAL USE, THE OWNER WILL REPLACE THE CONTRACTOR LOCK WITH ITS OWN LOCK.

7) WATER QUALITY SAMPLING STATIONS MUST BE INSTALLED ON A CONCRETE BASE AND MUST BE PLUMB WITHIN 3 DEGREES.

8) IF SIDEWALKS, CURBS, OR GUTTERS ARE CUT PROVIDE THREE #4 DOWELS EACH SIDE PRIOR TO REPLACING CONCRETE.

9) CONTRACTOR LOCATE SAMPLE STATION SO SAMPLE WATER DOES NOT FLOW INTO UNDERGROUND VALVE BOX DURING FLUSHING.

10) THE CONTRACTOR MAY, UPON APPROVAL OF THE PROJECT REPRESENTATIVE, CONNECT DIRECTLY TO THE UPSTREAM SIDE OF AN EXISTING JVWCD SERVICE METER.

11) THE CONTRACTOR MAY, UPON APPROVAL OF THE OWNER'S REPRESENTATIVE, CONNECT DIRECTLY TO A JVWCD HYDRANT LATERAL IF THE HYDRANT LATERAL IS LESS THAN 5 FEET IN LENGTH. NO CONNECTIONS ALLOWED TO HYDRANT LATERALS OVER 5 FEET IN LENGTH, EXCEPT AS NOTED IN THE SPECIFICATIONS.

12) HORIZONTAL BORING FROM THE PARK STRIP IS ACCEPTABLE IN LIEU OF PAVEMENT REMOVAL / REPLACEMENT AT CONTRACTOR OPTION.

13) PIPING INSIDE OF BURIED VAULTS TO BE 3/4" HARD COPPER OR STAINLESS STEEL. SOFT COPPER PIPING MATERIAL NOT ACCEPTABLE INSIDE OF VAULT STRUCTURES. SUPPORTS SHALL BE LOCATED A MAXIMUM OF 48" ON–CENTER AND 6" OF EITHER SIDE OF A HORIZONTAL OR VERTICAL BEND.

14) CONTRACTOR SHALL REFER TO SITE SPECIFIC NOTES INCLUDED IN THE SPECIFICATIONS.

GENERAL NOTES:

1) SAMPLING STATIONS SHALL BE 48" BURY, WITH A 3/4" FIP INLET, AND A (3/4" HOSE OR UNTHREADED) NOZZLE.

2) ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NON–REMOVABLE HOUSING.

3) WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.

4) ALL WORKING PARTS WILL BE OF BRASS AND BE REMOVABLE FROM ABOVE GROUND WITH NO DIGGING.

5) A 3/8" COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.

6) ECLIPSE NO. 88 "SECURE" SAMPLING STATION WITH JORDAN VALLEY WATER CONSERVANCY DISTRICT LOGO CAST IN DOOR. SEVERE COLD VERSION WITH 3/8" VENT TUBE, PVC SLEEVE, ALL BRASS WATERWAY WITH SECURITY ENHANCEMENTS. STATION SHALL BE MANUFACTURED BY KUPFERLE FOUNDRY, ST. LOUIS, MO 63102 (800–231–3990).

7) FORD FITTINGS AVAILABLE FROM PLUMBERS SUPPLY (801–261–1144).

8) CONTRACTOR SHALL ORIENT EACH OF THE SAMPLING STATIONS WITH THE LOCK CYLINDER FACING SOUTH WHEN POSSIBLE (FOR MELTING OF WINTER ICE ON LOCK CYLINDER). OWNER WILL CLARIFY THE DESIGN ORIENTATIONS AT TIME OF THE SUBMITTAL FOR THE SAMPLING STATIONS.

9) TAPPING SADDLE REQUIRED WHEN CONNECTING TO PVC PIPELINE. PROVIDE FORD MODEL F–700 CORP STOP AND ROMAC MODEL #202N SADDLE WITH EPOXY COATING AND STAINLESS STEEL STRAPS.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

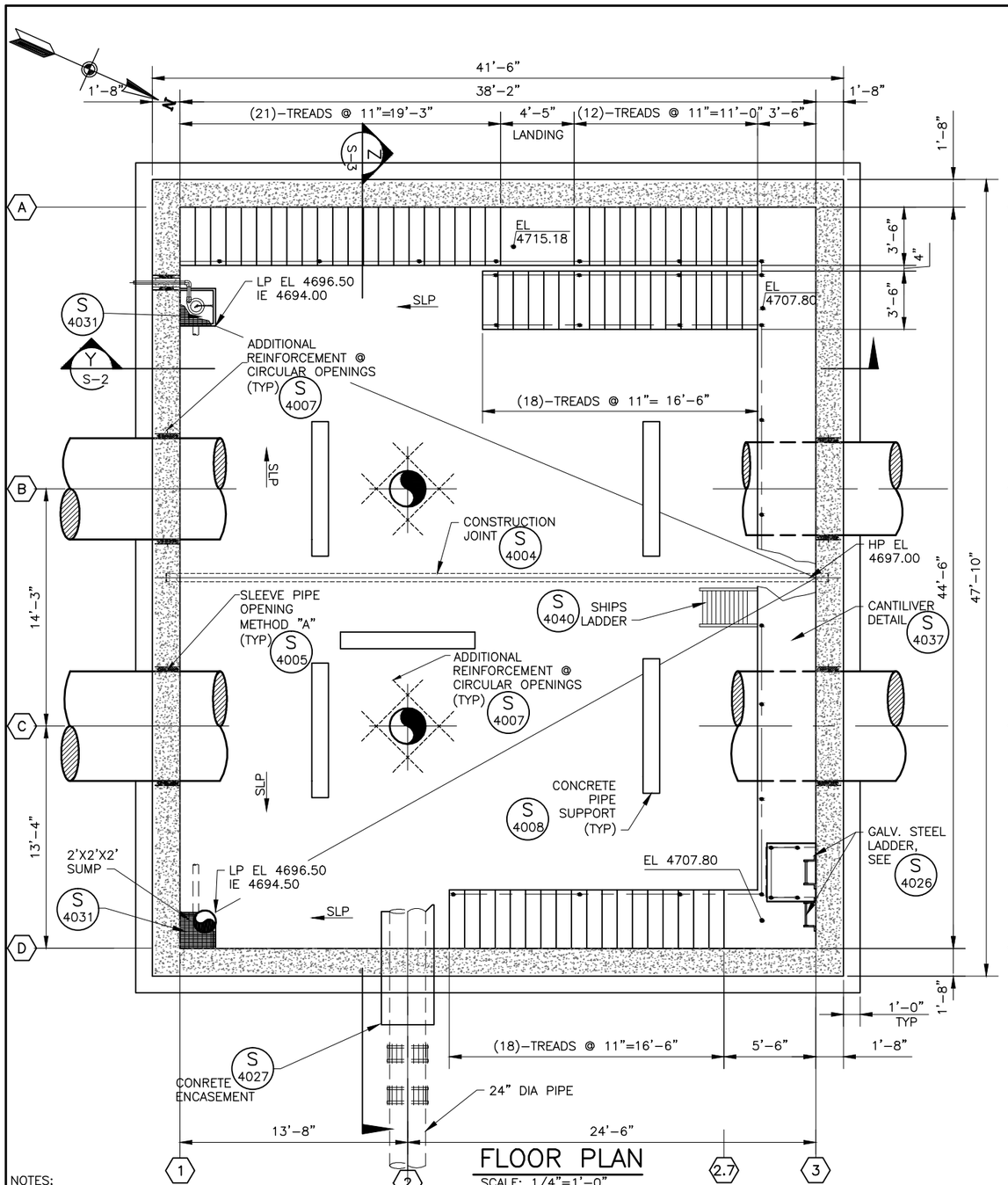
DESIGN T. OLSEN DESIGN
DRAWN B. ABEL DRAWN
REVIEW
CHECKED M. COLLINS CHECKED
APPROVED J. LUETTINGER APPROVED

GENERAL MECHANICAL DETAILS – 4

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

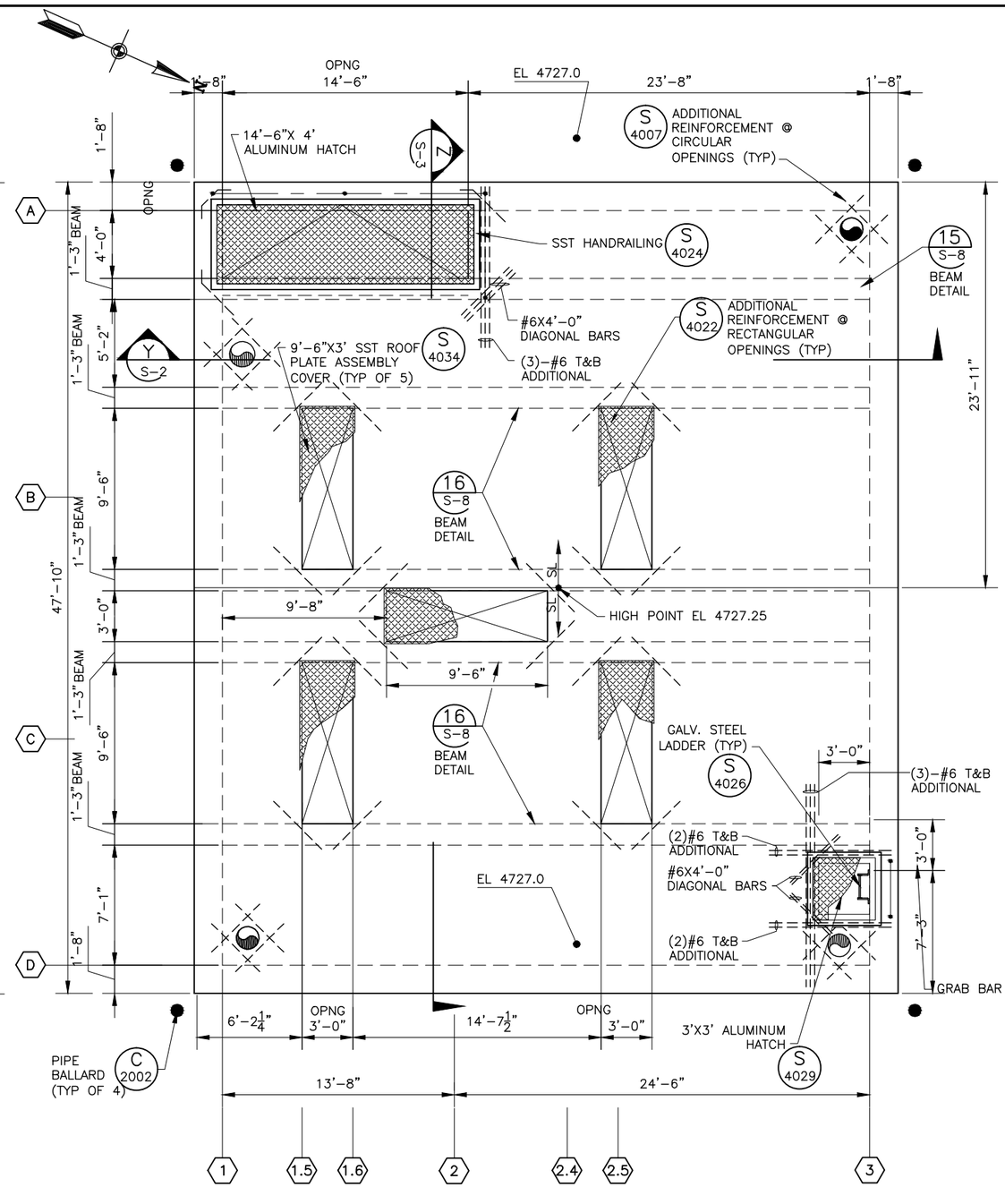
DRAWING NO. GM–4
SHEET 78 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GM04.dwg Dec28,2011 – 10:08am



FLOOR PLAN

SCALE: 1/4"=1'-0"



ROOF PLAN

SCALE: 1/4"=1'-0"

NOTES:

1. COORDINATE WITH MECHANICAL DRAWINGS THE LOCATION OF PIPE PENETRATIONS, AND PIPE SUPPORTS.
2. ALL CRACKS IN FLOOR, WALL, OR ROOF SLAB SHALL BE REPAIRED PER DETAIL S/4012.
3. SEE DRAWING GS-1 FOR GENERAL STRUCTURAL NOTES.
4. SLOPE ROOF AND FLOOR OF VAULT AS SHOWN ON PLAN TO ENSURE FREE DRAINAGE FROM ENTIRE FLOOR AREA, DRAINAGE PROBLEMS CAUSED BY HIGH POINTS IN FLOOR SLAB SHALL BE CORRECTED AT CONTRACTORS EXPENSE.
5. ALL PIPING UNDER FLOOR SLAB SHOULD BE CONCRETE ENCASED SEE S/4027.
6. PROVIDE A MINIMUM OF 12" CLR SPACE BETWEEN PIPE SUPPORTS, COUPLINGS, AND WALLS.
7. THE JVWCD INTERCONNECTION VAULT IS CLASSIFIED AS MILDLY-CORROSIVE ENVIRONMENT. ALL METAL FABRICATIONS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 05500-MISCELLANEOUS METALS. ALL PROTECTIVE COATINGS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 09900-COATING AND PAINTING.
8. ALL HANDRAIL SHALL BE GALVANIZED STEEL SCHEDULE 40 STANDARD PIPE WITH STAINLESS STEEL HARDWARE UNLESS NOTED OTHERWISE.
9. ALL STRUCTURAL SUPPORT STEEL, INCLUDING BEAMS, COLUMNS, AND MISCELLANEOUS SUPPORT ANGLES, SHALL BE GALVANIZED STEEL WITH STAINLESS STEEL HARDWARE.
10. ALL GRATING SHALL BE ALUMINUM.
11. ALL LADDERS SHALL BE GALVANIZED STEEL WITH STAINLESS STEEL HARDWARE.
12. ALL LARGE DIAMETER (>24") FLANGE HARDWARE, INCLUDING BOLTS, NUTS, AND WASHERS, SHALL BE CARBON STEEL, ASTM A307, GRADE A AND COATED IN ACCORDANCE WITH SECTION 09900-COATING AND PAINTING.
13. COAT INTERIOR FLOOR OF VAULT WITH NON-SKID PROTECTIVE COATING IN ACCORDANCE WITH SECTION 09900 - COATING AND PAINTING. EXTEND COATING ON WALLS TO AN ELEVATION OF 1'-6" ABOVE FLOOR.

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED M. COLLINS APPROVED M. ROBLEZ

DESIGN DESIGN MR/RG DRAWN R. GARCIA

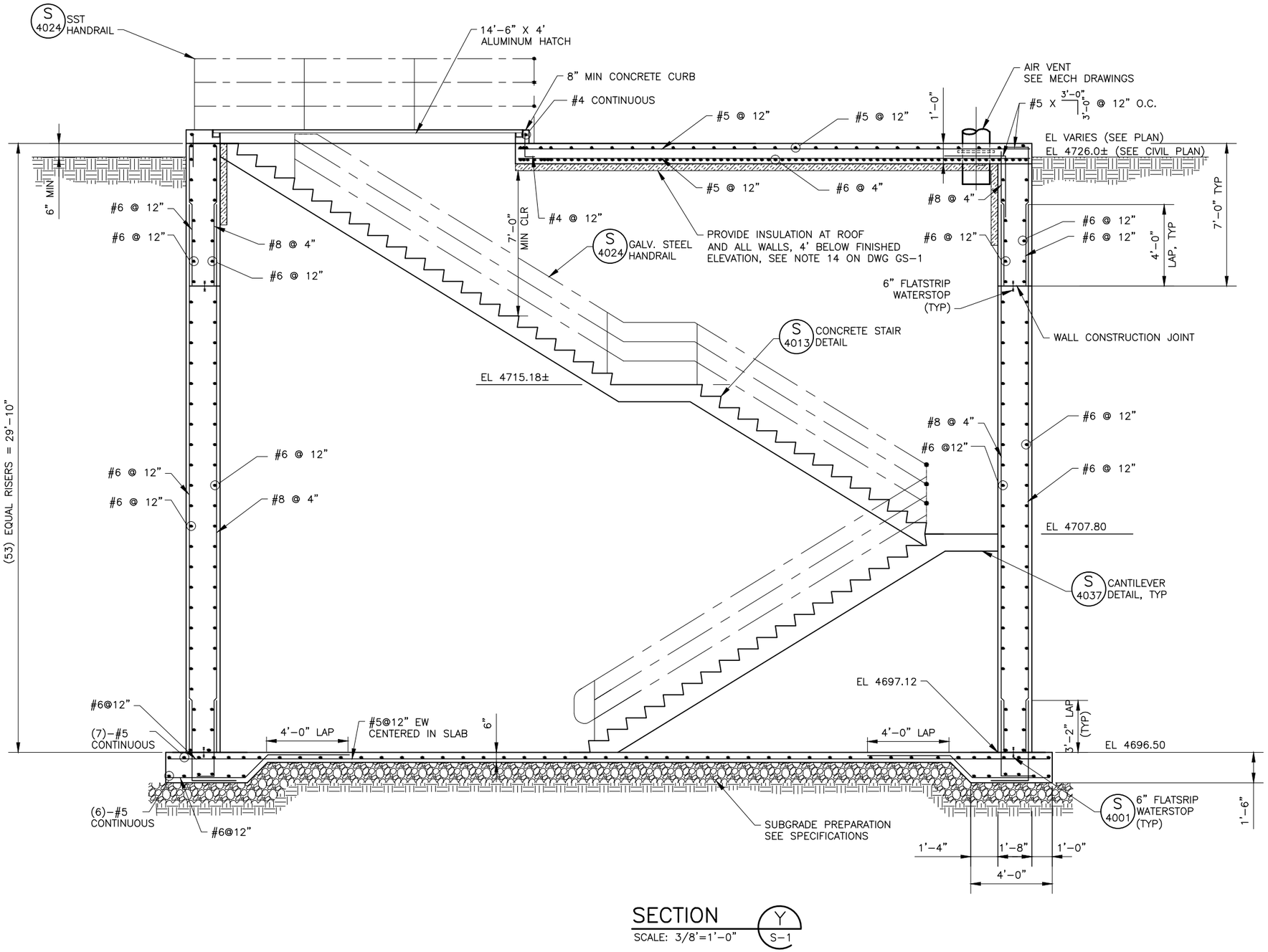
STRUCTURAL
JVWTP INTERCONNECTION VAULT FLOOR AND ROOF PLAN

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. S-1

SHEET 79 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_S01.dwg Nov30,2011 - 1:25pm



SECTION (Y / S-1)
SCALE: 3/8'=1'-0"

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

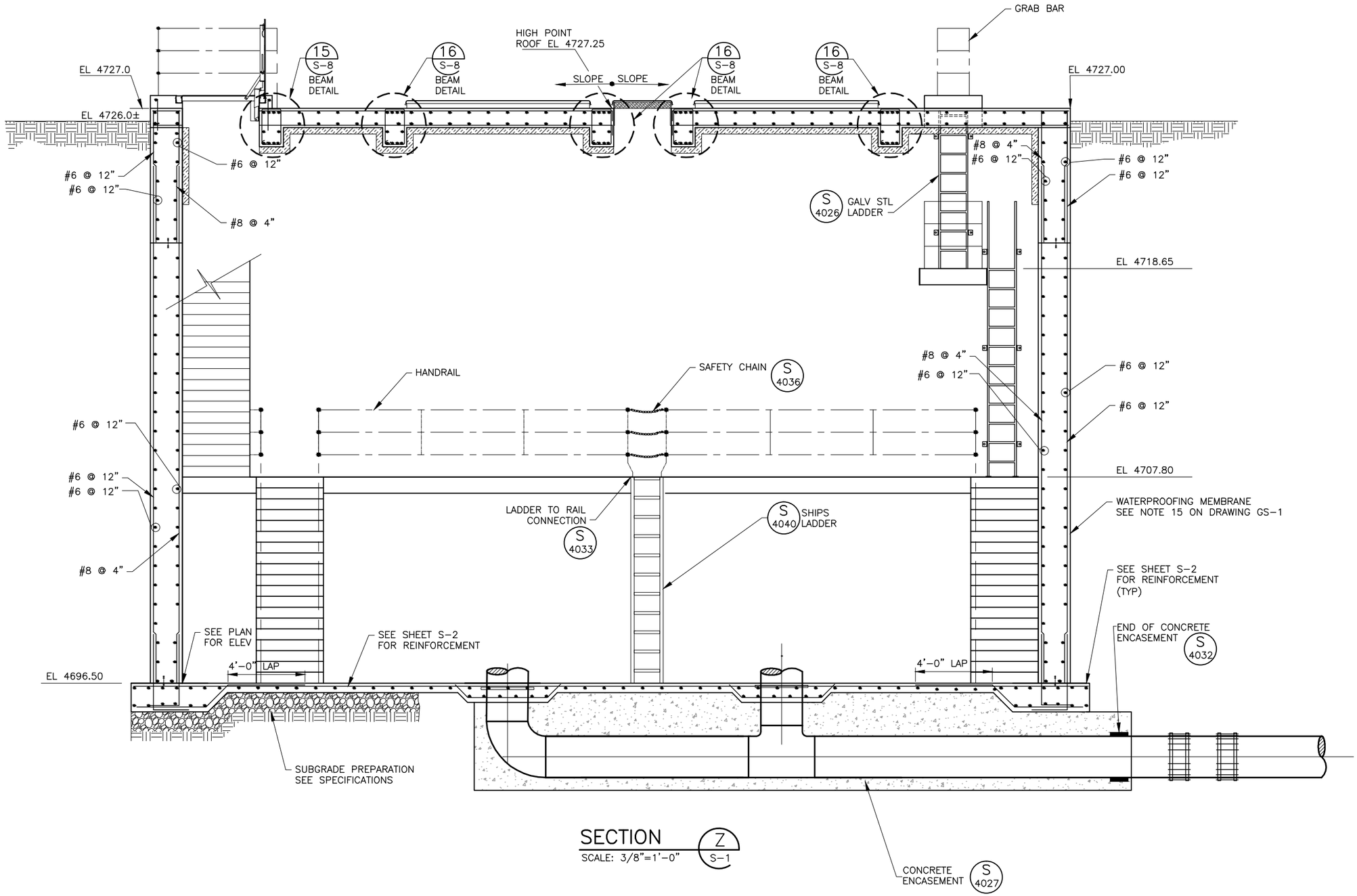
DESIGN MR/RG
DRAWN R. GARCIA
REVIEW
CHECKED M. COLLINS
APPROVED M. ROBLEZ

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

STRUCTURAL
JVWTP INTERCONNECTION VAULT SECTION

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. S-2
SHEET 80 OF 110



SECTION Z S-1
SCALE: 3/8"=1'-0"

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN M.R./R.G. REVIEW M. COLLINS
DRAWN R. GARCIA CHECKED J. LUETTINGER
APPROVED

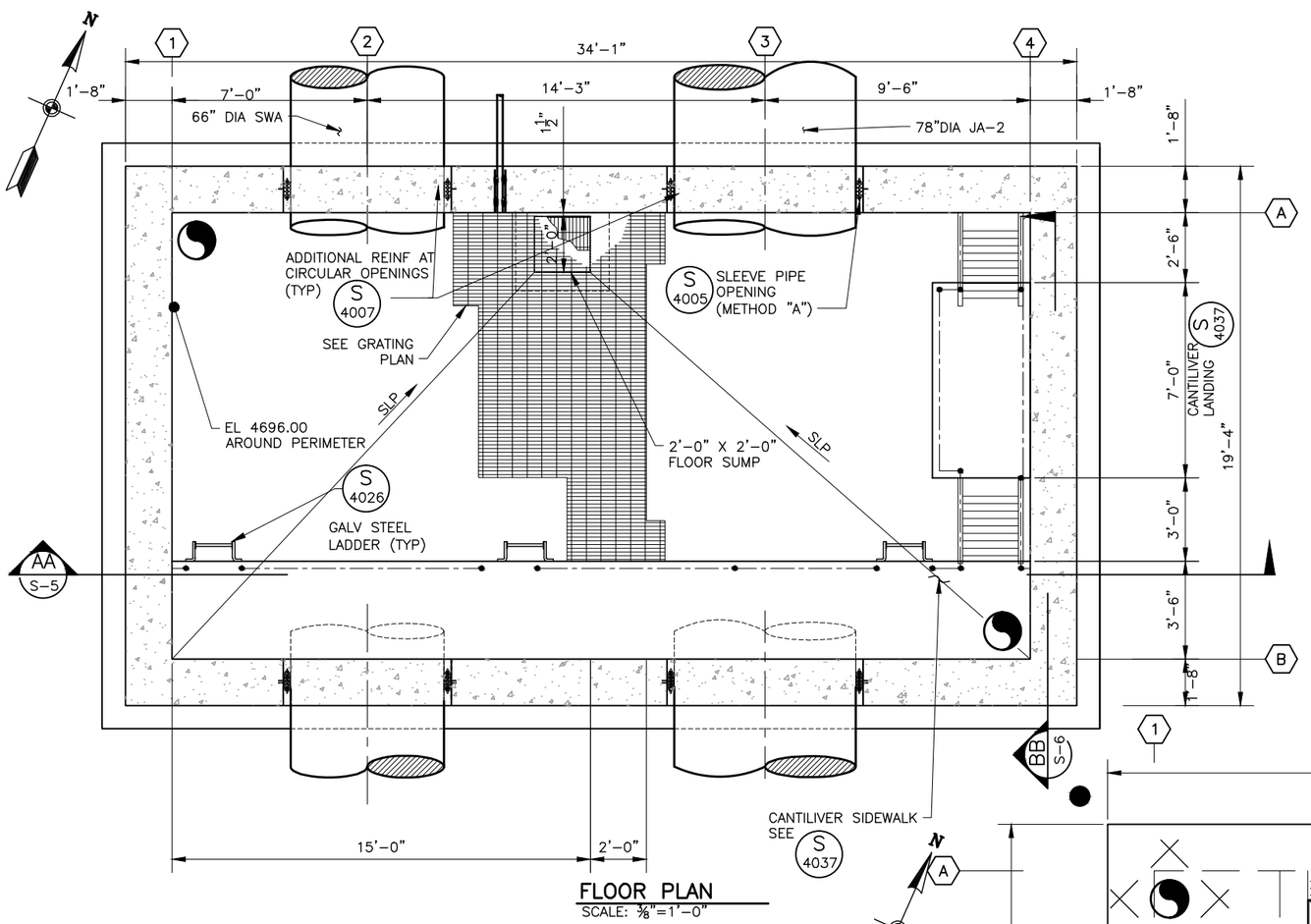
STRUCTURAL

JVWTP INTERCONNECTION VAULT – SECTION

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. S-3
SHEET 81 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_S03.dwg Nov16,2011 – 10:13am



FLOOR PLAN
SCALE: ⅜"=1'-0"

NOTES:
1. COORDINATE WITH MECHANICAL DRAWINGS THE LOCATION OF PIPE PENETRATIONS, AND PIPE SUPPORTS.
2. ALL CRACKS IN FLOOR, WALL, OR ROOF SLAB SHALL BE REPAIRED PER DETAIL S 4012.
3. SEE DRAWING GS-1 FOR GENERAL STRUCTURAL NOTES.
4. SLOPE ROOF AND FLOOR OF VAULT AS SHOWN ON PLAN TO ENSURE FREE DRAINAGE FROM ENTIRE FLOOR AREA, DRAINAGE PROBLEMS CAUSED BY HIGH POINTS IN FLOOR SLAB SHALL BE CORRECTED AT CONTRACTORS EXPENSE.
5. THE METER VAULT IS CLASSIFIED AS MILDLY-CORROSIVE ENVIRONMENT. ALL METAL FABRICATIONS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 05500-MISCELLANEOUS METALS. ALL PROTECTIVE COATINGS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 09900-COATING AND PAINTING.
6. ALL HANDRAIL SHALL BE GALVANIZED STEEL SCHEDULE 40 STANDARD PIPE WITH STAINLESS STEEL HARDWARE, UNLESS NOTED OTHERWISE.
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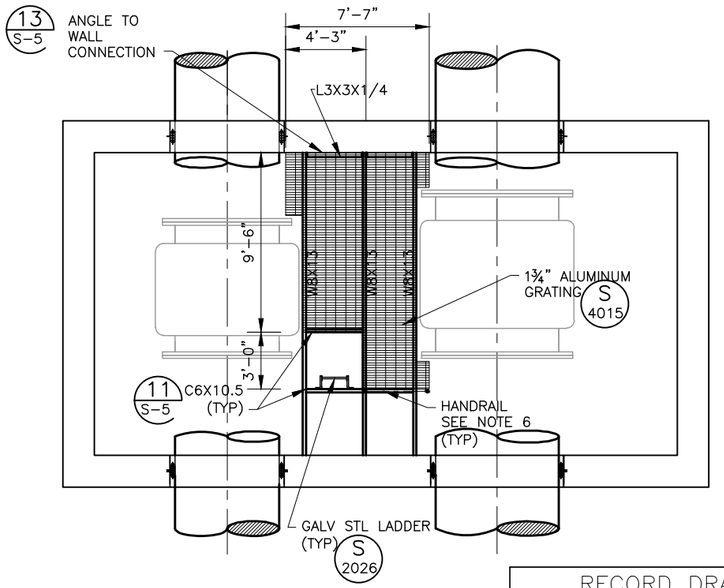
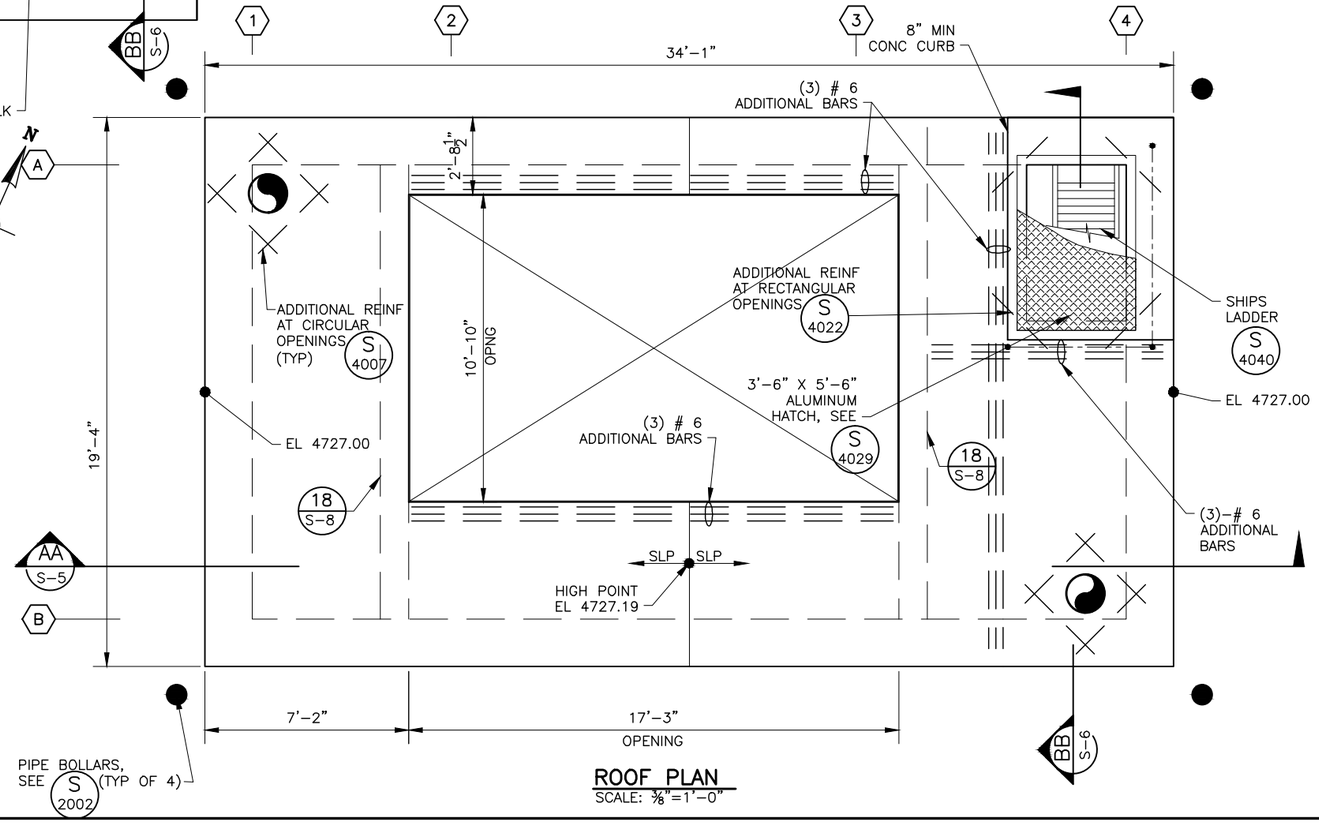
8. ALL GRATING SHALL BE ALUMINUM.
9. ALL LADDERS SHALL BE GALVANIZED STEEL WITH STAINLESS STEEL HARDWARE.
10. ALL FLANGE LARGE DIAMETER (>24") HARDWARE, INCLUDING BOLTS, NUTS, AND WASHERS, SHALL BE CARBON STEEL, ASTM A307, GRADE A AND COATED IN ACCORDANCE WITH SECTION 099900-PAINTING.
11. COAT INTERIOR FLOOR OF VAULT WITH NON-SKID PROTECTIVE COATING IN ACCORDANCE WITH SECTION 09900 - COATING AND PAINTING. EXTEND COATING ON WALLS TO AN ELEVATION OF 1'-6" ABOVE FLOOR.



GRATING PLAN
SCALE: 1/4"=1'-0"



ROOF PLAN
SCALE: ⅜"=1'-0"

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

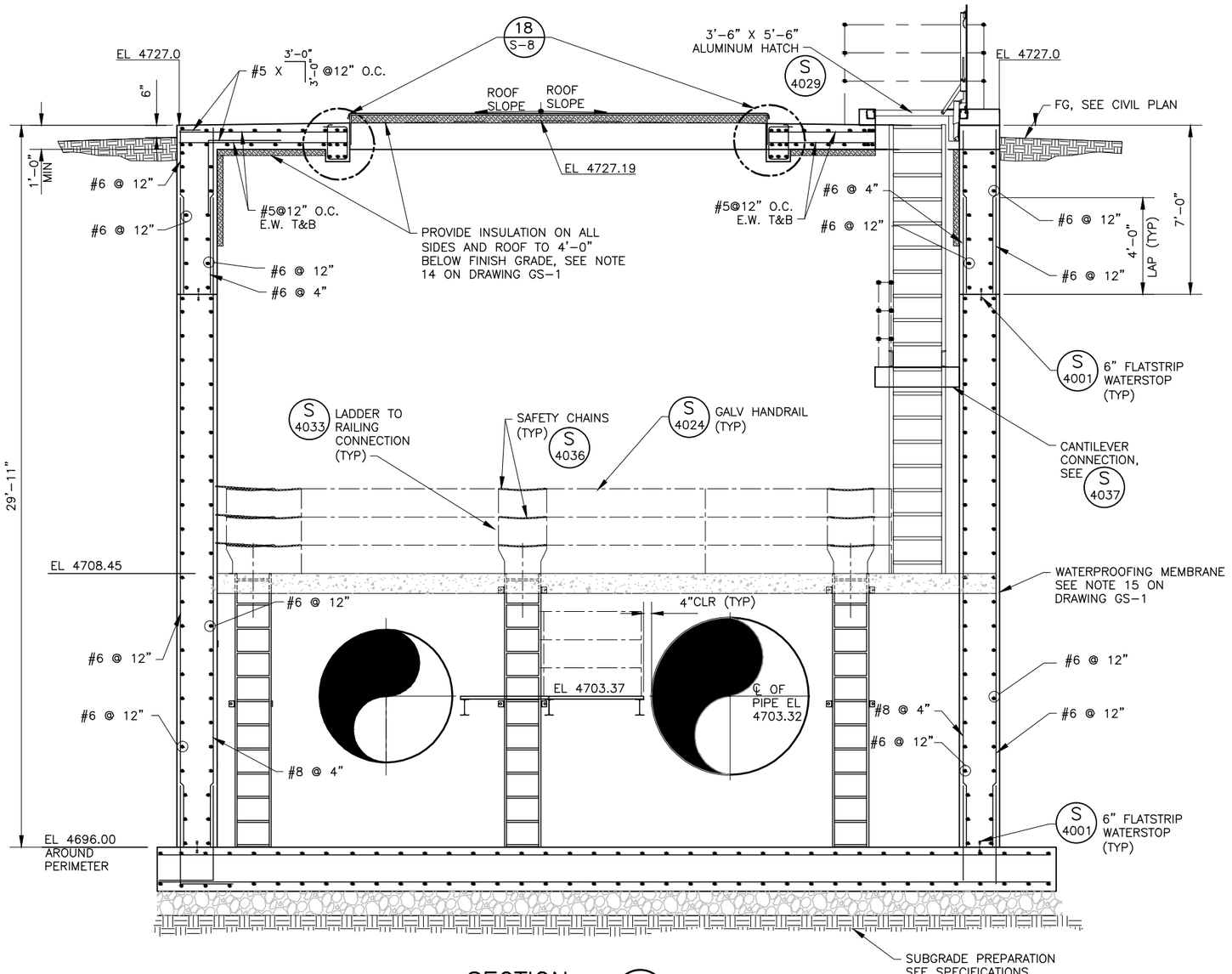
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN WR/RG
DRAWN R .GARCIA
REVIEW
CHECKED M. COLLINS
APPROVED M. ROBLEZ

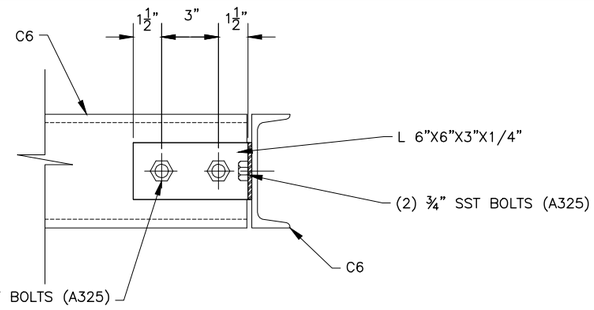
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

STRUCTURAL
METER VAULT
FLOOR AND ROOF PLAN
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

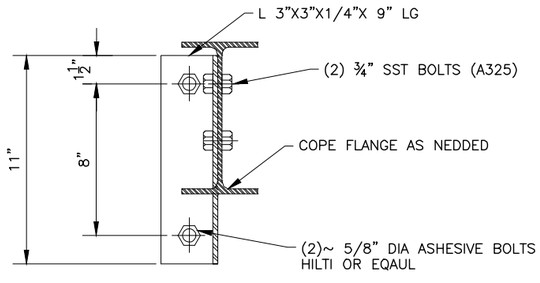
DRAWING NO. S-4
SHEET 82 OF 110



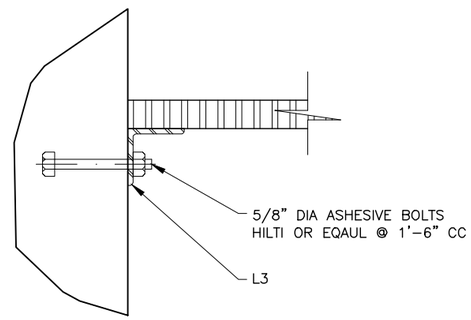
SECTION AA
SCALE: 3/8"=1'-0"
S-4



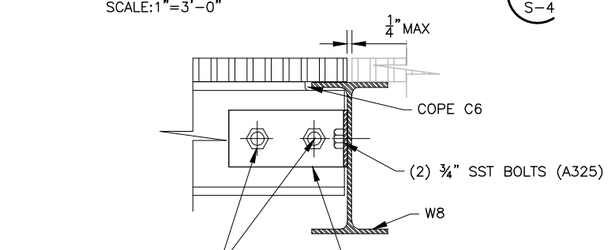
C6 TO C6 CONNECTION 11
SCALE:1"=3'-0"
S-4



W8 TO WALL CONNECTION 12
SCALE:1"=3'-0"
S-4



L3 TO WALL CONNECTION 13
SCALE:1"=3'-0"
S-4



C6 TO W8 CONNECTION 14
SCALE:1"=3'-0"
S-4

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

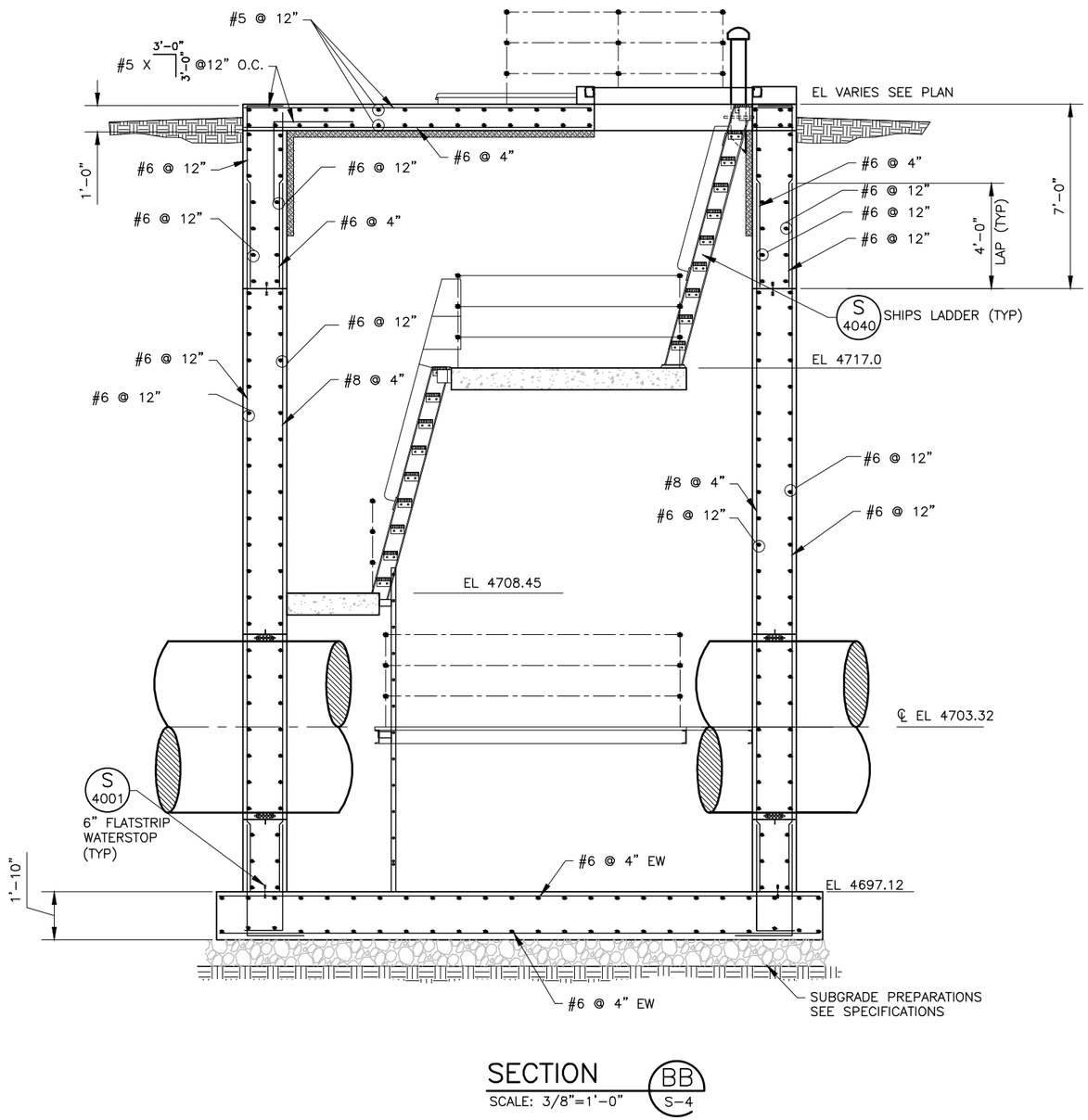
DESIGN MR/RG
DRAWN R. GARCIA
REVIEW
CHECKED M. COLINS
APPROVED M. ROBLEZ

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

STRUCTURAL
METER VAULT
SECTIONS AND DETAILS
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. S-5
SHEET 83 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_S05.dwg Nov16,2011 – 10:17am



SECTION BB

SCALE: 3/8"=1'-0"

S-4

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION
3	6/2010	OLSEN	FIELD ORDER NO. 3

REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN M. ROBLEZ
DRAWN R. GARCIA

REVIEW
CHECKED M. COLLINS
APPROVED M. ROBLEZ

STRUCTURAL

METER VAULT SECTIONS AND DETAILS

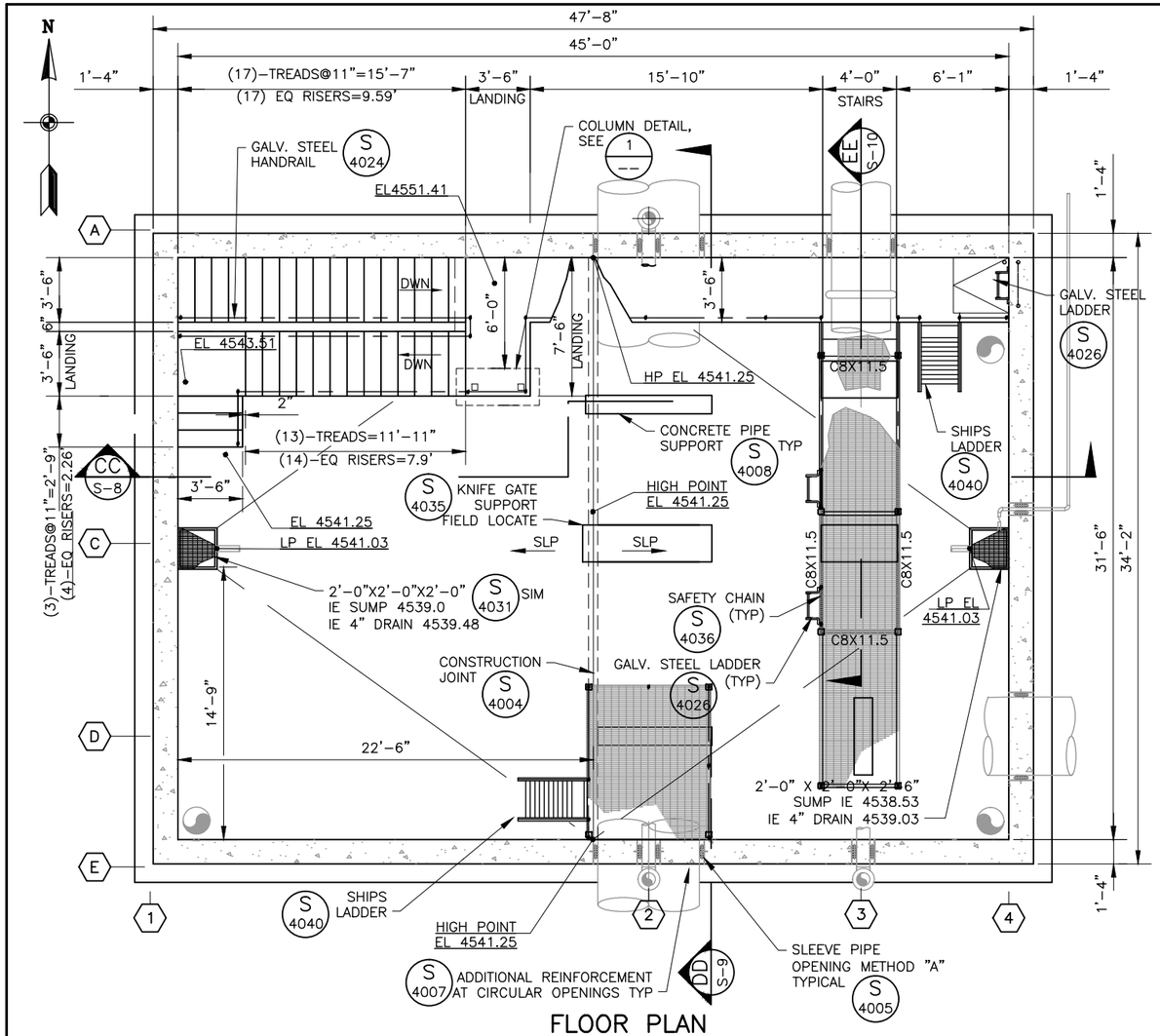
DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

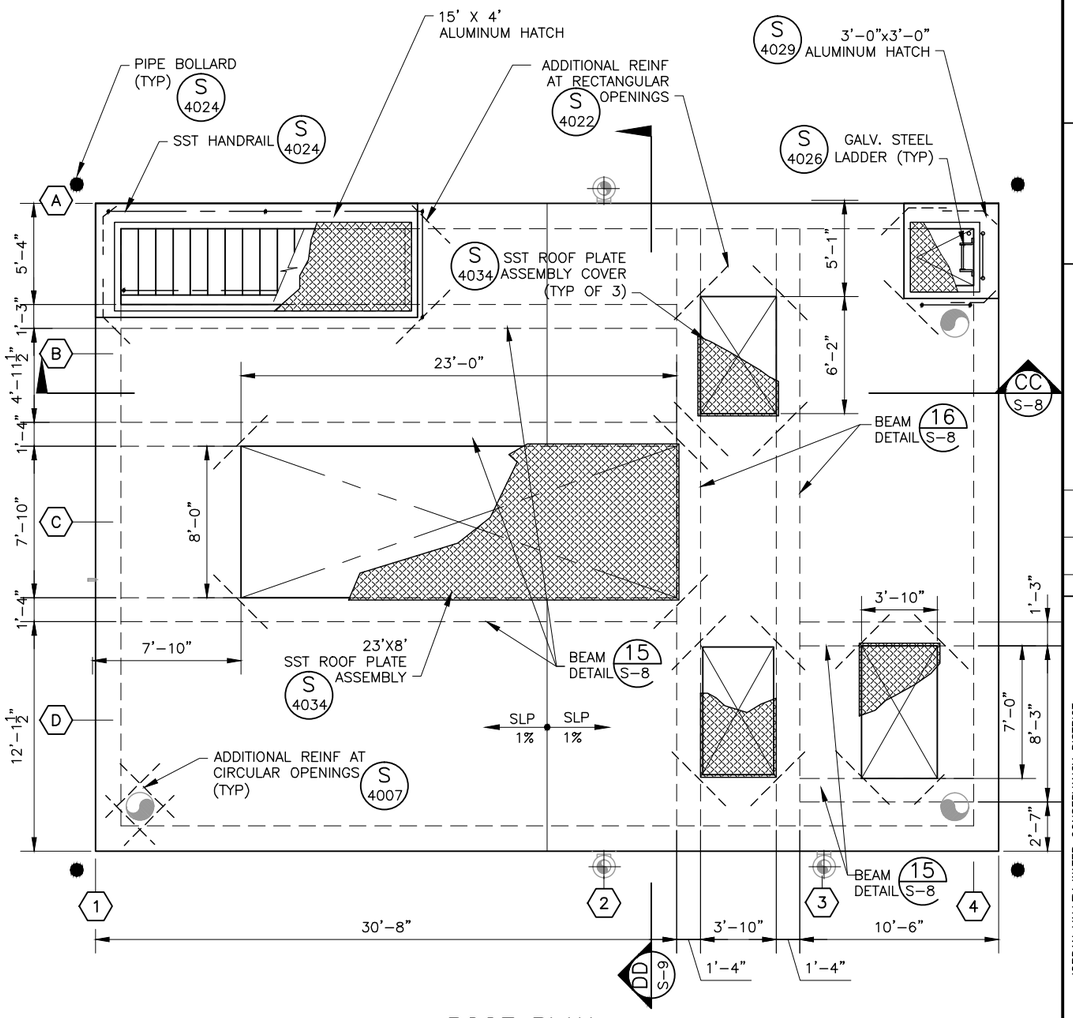
DRAWING NO. S-6

SHEET 84 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_S06.dwg Nov30,2011 – 1:30pm



FLOOR PLAN
SCALE: 1/4" = 1'-0"



ROOF PLAN
SCALE: 1/4" = 1'-0"

NOTES:

1. COORDINATE WITH MECHANICAL DRAWINGS THE LOCATION OF PIPE PENETRATIONS, AND PIPE SUPPORTS.
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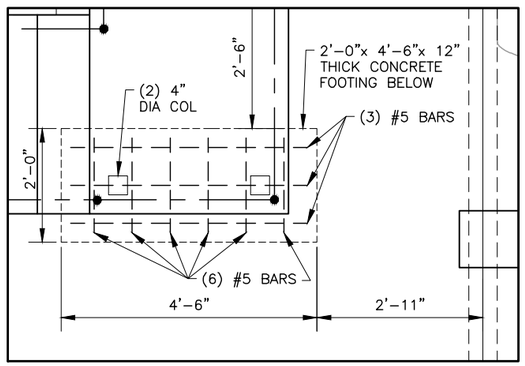

COLUMN DETAIL 1
3/4"=1'-0"

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

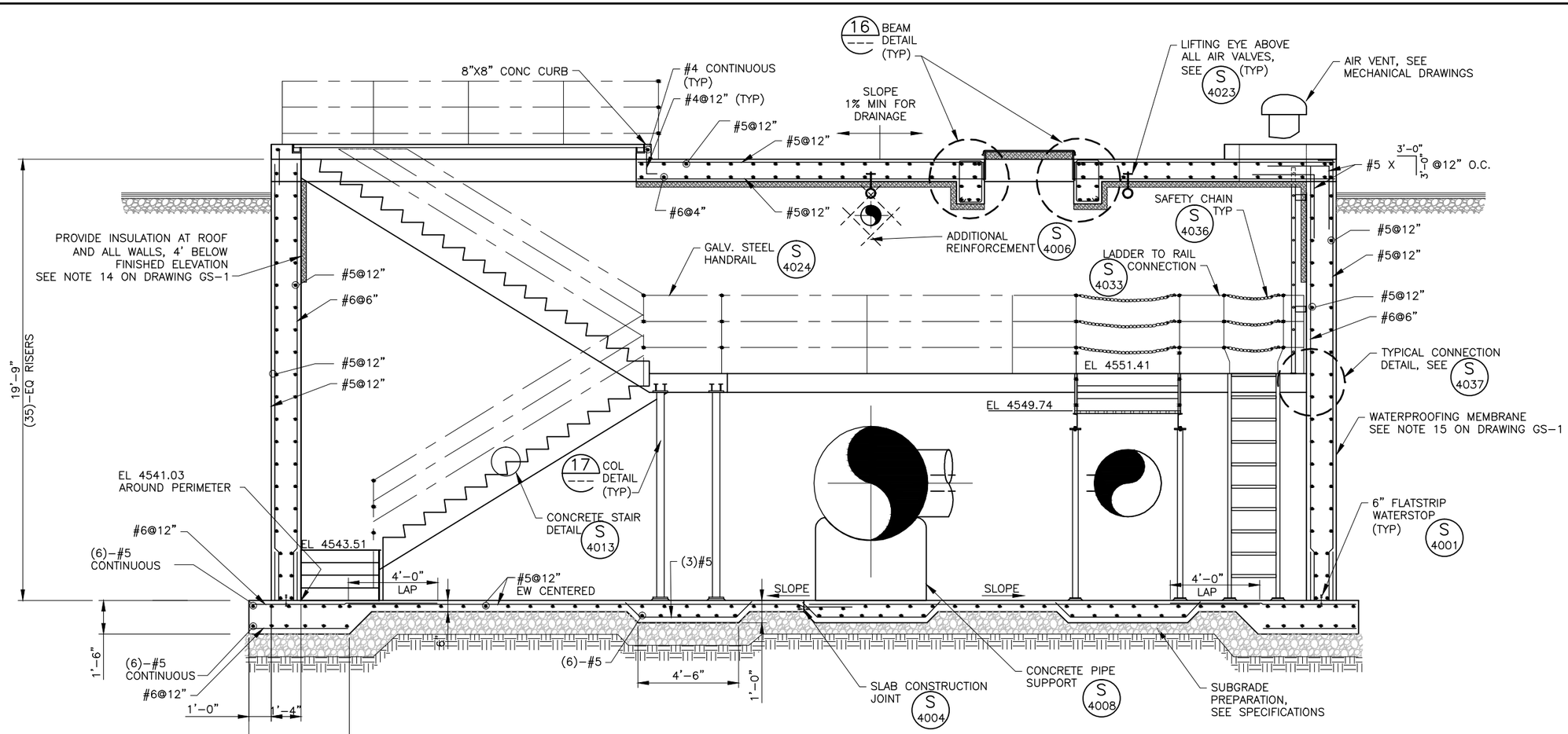
DESIGN MR/RG R. GARCIA
DRAWN
REVIEW M. COLLINS
CHECKED
APPROVED M. ROBLEZ

13400 SOUTH MAINLINE VALVE & INTERCONNECTION VAULT - PLAN

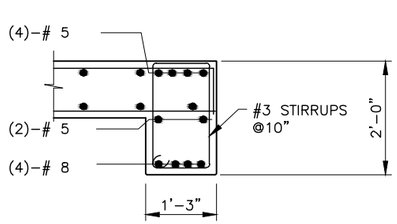
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. S-7
SHEET 85 OF 110

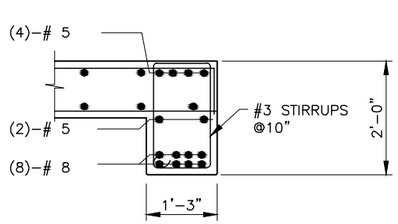
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_S07.dwg Nov16,2011 - 10:24am



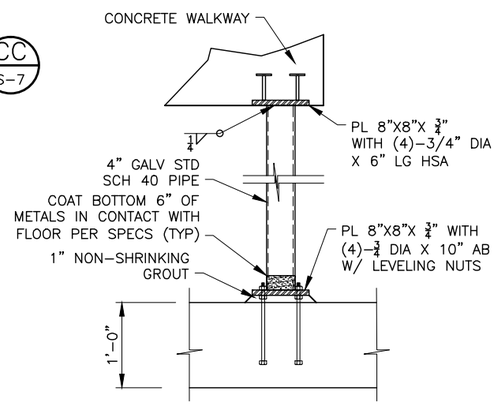
SECTION CC S-7
SCALE: 3/8"=1'-0"



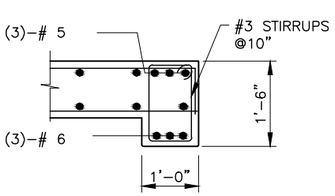
DETAIL 15 (S-1, S-3, S-7, S-8)
SCALE: 3/4"=1'-0"



DETAIL 16 (S-1, S-3, S-7)
SCALE: 3/4"=1'-0"



COLUM DETAIL 17
SCALE: 3/4"=1'-0"



DETAIL 18 (S-4, S-5)
SCALE: 3/4"=1'-0"

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

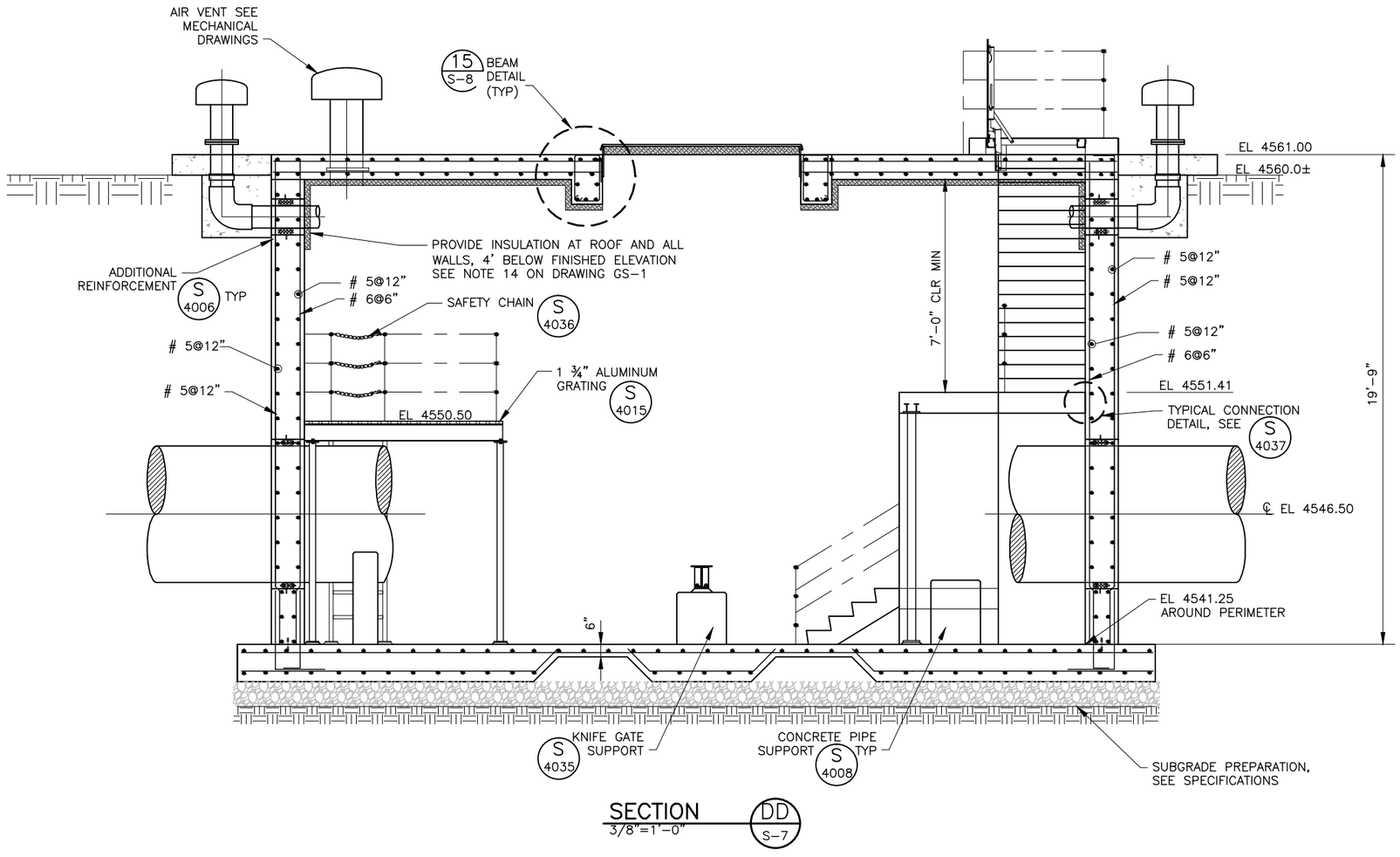
DESIGN M.R./R.G. DESIGN
DRAWN R. GARCIA DRAWN
CHECKED M. COLLINS CHECKED
APPROVED M. ROBLEZ APPROVED

STRUCTURAL
13400 SOUTH MAINLINE VALVE & INTERCONNECTION VAULT - SECTION

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. S-8
SHEET 86 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_S08.dwg Nov30,2011 - 1:32pm



SECTION DD
3/8"=1'-0" — S-7

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN M. ROBLEZ DESIGN
DRAWN R. GARCIA DRAWN
REVIEW M. COLLINS CHECKED
APPROVED M. ROBLEZ

STRUCTURAL
13400 SOUTH MAINLINE VALVE & INTERCONNECT VAULT - SECTION

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. S-9
SHEET 87 OF 110

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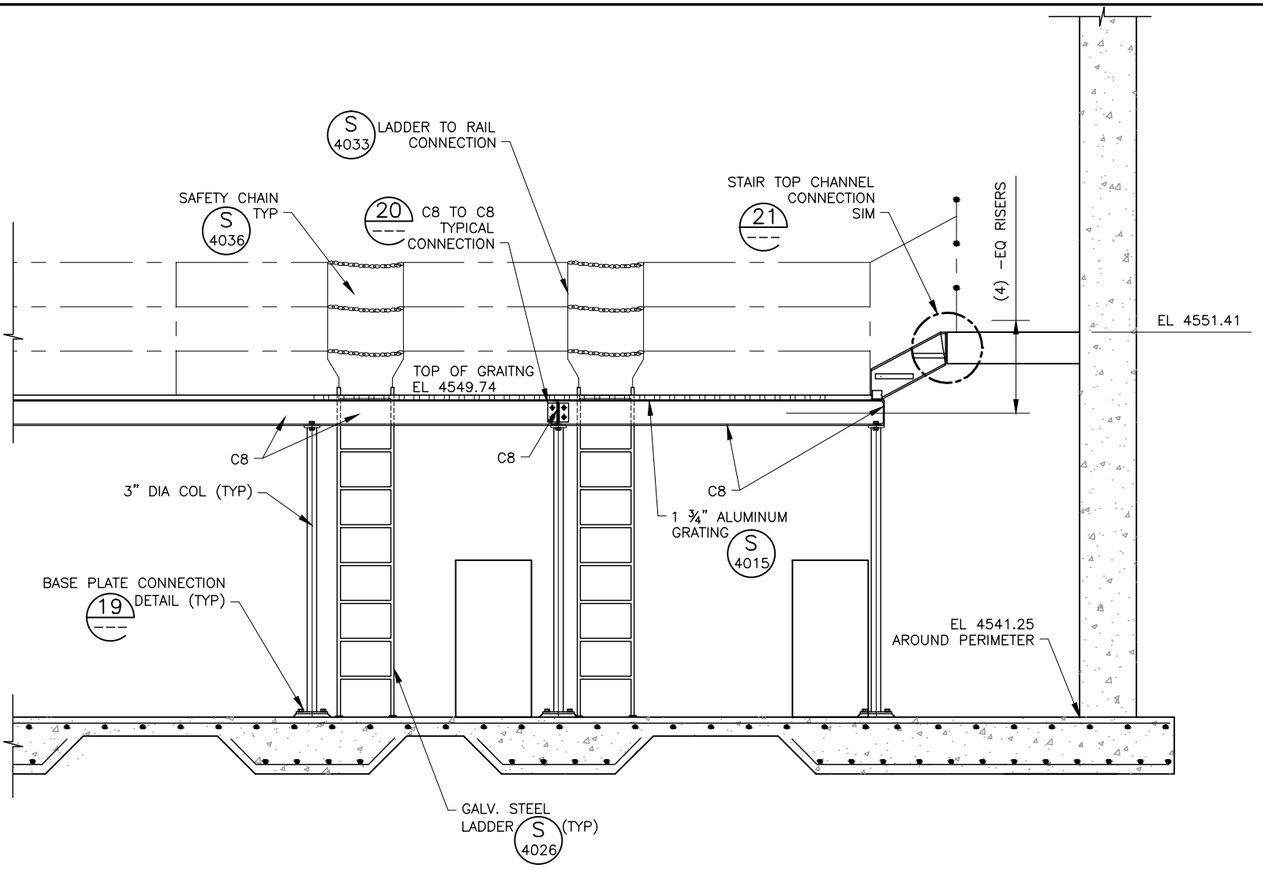
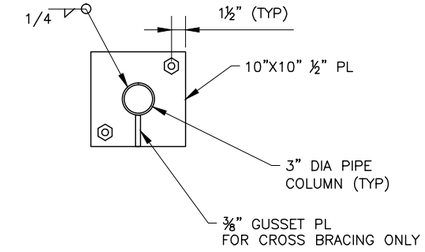
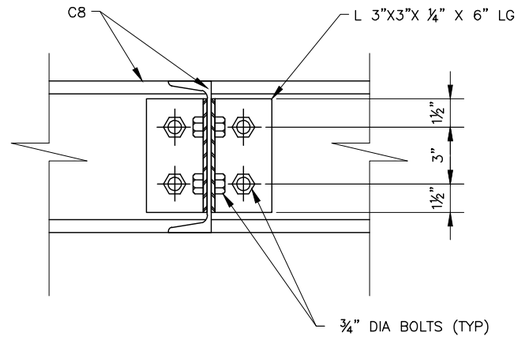


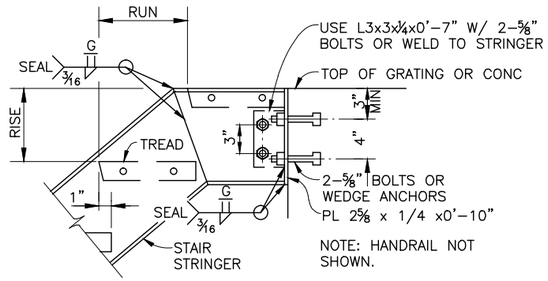
SECTION EE
SCALE: 3/8"=1'-0"
S-7



BASE PL DETAIL 19
SCALE: 3/8"=1'-0"



C8 TO C8 CONNECTION 20
SCALE: 3/8"=1'-0"



STAIR TOP CONNECTION 21
SCALE: 3/8"=1'-0"

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN MR/RG DESIGN
DRAWN R. GARCIA
REVIEW M. COLLINS CHECKED
APPROVED M. ROBLEZ

13400 SOUTH MAINLINE VALVE & INTERCONNECTION VAULT - SECTION

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. S-10
SHEET 88 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_S10.dwg Nov16,2011 - 10:31am

CONCRETE:

ALL CONCRETE MATERIALS SHALL COMPLY WITH THE STANDARDS SPECIFIED IN THE LATEST EDITION OF THE ACI 318 BUILDING CODE. EACH MIX DESIGN SHALL BE REVIEWED BY AN APPROVED INDEPENDENT LABORATORY, AND SHALL BE SUBMITTED TO THE ENGINEER AT LEAST 2 WEEKS PRIOR TO THE PLACEMENT OF CONCRETE. CONTRACTOR SHALL INFORM THE ENGINEER AT LEAST 2 DAYS PRIOR TO PLACING ANY CONCRETE SO THAT THE ENGINEER MAY HAVE THE OPPORTUNITY TO REVIEW THE WORK.

CONCRETE SHALL CONSIST OF TYPE II CEMENT WITH A MAXIMUM C3A CONTENT OF 5 PERCENT. THE MAXIMUM WATER–CEMENT RATIO SHALL BE 0.45.

CONCRETE TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING LABORATORY. THE TESTING AGENCY SHALL TEST (4) CYLINDERS FROM EACH CLASS OF CONCRETE USED EACH DAY. A MINIMUM OF (1) SAMPLE MUST BE TAKEN FROM EACH 50 CUBIC YARDS OF CONCRETE.

LOCATION –	SPECIAL INSPECT.	SLUMP (MAX)	AGGREGATE (MAX SIZE)	COMPRESSIVE STRENGTH (PSI)
FOOTINGS	YES	4	1" DIA	4000
STEM WALLS	YES	4	1" DIA	4000
SLAB ON GRADE	YES	5	3/4" DIA	4000

ANY CONCRETE THAT FAILS TO MEET SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF THE CONTRACTOR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION, DESIGN, PLACEMENT AND REMOVAL OF ALL FORMWORK. ALL SHORING DURING PLACEMENT OF CONCRETE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

CONCRETE SHALL BE SPECIALLY INSPECTED PER IBC 2006 TABLE 1704.4

CONCRETE REINFORCING:

ALL REINFORCING BARS SHALL CONFORM TO ASTM A–615 GRADE 60, Fy=60,000 PSI MIN., UNLESS NOTED OTHERWISE. BARS SHALL BE TIED SECURE PRIOR TO PLACEMENT OF CONCRETE TO MAINTAIN PROPER PLACEMENT AFTER CONCRETE IS IN PLACE. LAP ALL BARS 40 DIAMETERS UNLESS NOTED OTHERWISE. SPLICE BARS ONLY WHERE SHOWN ON PLANS.

MAINTAIN THE FOLLOWING CONCRETE COVERAGES FOR CONCRETE REINFORCING:

UNFORMED SURFACES IN CONTACT WITH EARTH.....3"
FORMED SURFACES IN CONTACT WITH EARTH.....2"
FORMED SURFACES EXPOSED TO OUTSIDE WEATHER.....2"
SLABS AND WALLS NOT EXPOSED TO WEATHER.....1 ½"
CLEAR DISTANCE BETWEEN BARS.....2" U.N.O.
STEEL PIPE TO CONCRETE SURFACE.....2"

SHOP DRAWINGS OF ALL BARS AND LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. NORMAL WEIGHT CONCRETE SHALL HAVE A UNIT WEIGHT OF POUNDS PER CUBIC FOOT. USE OF CALCIUM CHLORIDE IS NOT PERMITTED IN ANY CONCRETE MIXES. ALL OTHER ADDITIVES AND ADMIXTURES MUST HAVE THE WRITTEN APPROVAL OF THE ENGINEER. THE ENGINEER SHALL HAVE 10 BUSINESS DAYS TO REVIEW SHOP DRAWINGS.

FOUNDATIONS:

MAXIMUM ALLOWABLE SOIL PRESSURE: = 1500 PSF. PER GEOTECHNICAL INVESTIGATION REPORT TITLED "GEOTECHNICAL INVESTIGATION FOR THE SOUTHWEST AQUEDUCT REACH #2" WATER LINE, DATED MARCH 3, 2009.

ALL FOOTING DEPTHS INDICATED ON PLANS ARE MINIMUM DEPTHS. FOOTINGS MAY BE PLACED IN NEAT EXCAVATED TRENCHES. TRENCH SHALL BE APPROVED BY INSPECTOR PRIOR TO PLACEMENT OF CONCRETE. AT LOCATIONS WHERE STRUCTURAL FILL IS REQUIRED, FILL SHALL BE PLACED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION'S RECOMMENDATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME FAMILIAR WITH THE RECOMMENDATIONS OF FILL AND SITE PREPARATION DIRECTED IN THE GEOTECHNICAL INVESTIGATION.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL COMPONENTS SHALL BE FABRICATED AND ERECTED ACCORDING TO THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATIONS FOR DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", WITH " COMMENTARY", AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".

ALL STEEL SECTIONS SHALL CONFORM TO THE FOLLOWING:
WIDE FLANGE SHAPES: ASTM A572 GRADE 50 OR ASTM A992 GRADE 50.
HOLLOW STRUCTURAL SECTIONS: ASTM A500 GRADE B
Fy MIN. = 46 KSI
ANGLES, CHANNELS, PLATES & BARS: ASTM A36.

ALL WELDING SHALL BE DONE BY CERTIFIED AWS WELDERS, AND COMPLY WITH THE LATEST EDITION OF THE AWS D1.1 CODE FOR WELDING IN BUILDING CONSTRUCTION. ALL FILLET WELDS TO BE 3/16" UNLESS NOTED OTHERWISE. ALL STEEL TO STEEL BOLTED CONNECTIONS SHALL BE WITH ASTM A307, UNLESS NOTED OTHERWISE. PROVIDE EDGE DISTANCE IN ACCORDANCE TO AISC TABLE J3.7 UNLESS NOTED OTHERWISE. ALL FIELD WELDS SHALL BE SPECIALLY INSPECTED PER IBC 2000 TABLE 1704.3. ALL TESTING AND INSPECTION REPORTS SHALL BE SENT TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. THE ENGINEER SHALL HAVE 10 BUSINESS DAYS TO REVIEW SHOP DRAWINGS.

STRUCTURAL STEEL SHALL BE SPECIALLY INSPECTED AS PER IBC 2006, TABLE 1704.3

QUALITY ASSURANCE PLAN

SPECIAL INSPECTION:

1. AN APPROVED SPECIAL INSPECTION AGENCY SHALL BE RETAINED BY THE CONTRACTOR TO PERFORM A LEVEL 1 SPECIAL INSPECTIONS PER IBC 2009 CHAPTER 17 TABLE 1704.4.

CONCRETE

1. PROVIDE A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY AS LISTED BELOW.
2. PROVIDE SPECIAL INSPECTIONS OF THE CONCRETE CONSTRUCTION AS LISTED BELOW.

WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY:

AS PART OF THE QUALITY ASSURANCE AND SPECIAL INSPECTION PLAN, THE CONTRACTOR SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE OWNER A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY CONTAINING THE FOLLOWING ITEMS:

1. ACKNOWLEDGMENT AND AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS.
2. ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING AND THE DISTRIBUTION OF REPORTS.
4. IDENTIFICATION AND QUALLIFICATIONS OF THE PERSON(S) EXERCIZING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

GENERAL NOTES

1. ALL DETAILS, SECTIONS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS NOTED OR SHOWN OTHERWISE. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
2. REFER TO THE SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS.
3. ALL CONSTRUCTION AND INSPECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS AND SHALL NOT PROCEED WITH THE WORK INVOLVED UNTIL THE INSPECTIONS HAVE BEEN DONE.
4. ALL ASTM DESIGNATIONS SHALL BE AS AMENDED TO DATE, U.N.O.
5. THE CONTRACTOR MUST SUBMIT A WRITTEN REQUEST FOR, AND OBTAIN THE ENGINEER'S WRITTEN PRIOR APPROVAL FOR ALL CHANGES, MODIFICATIONS, AND/OR SUBSTITUTIONS.
6. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE MECHANICAL, AND ELECTRICAL DRAWINGS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION IN AND AROUND THE JOB SITE AND/OR ADJACENT PROPERTIES.
8. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR ALL PORTIONS OF THE STRUCTURES UNTIL THE ENTIRE STRUCTURE IS COMPLETE.
9. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
10. IF EXISTING CONDITIONS AT THE SITE ARE NOT AS SHOWN ON THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. CHANGES MAY OCCUR DUE TO SUCH VARIATIONS IN EXISTING CONDITIONS.
11. NO PENETRATIONS SHALL BE ALLOWED THROUGH ANY CONCRETE BEAMS, COLUMNS, PIERS, OR JAMBS, WITHOUT THE ENGINEER'S WRITTEN APPROVAL. MECHANICAL AND/OR OTHER PENETRATIONS SHALL BE RE–ROUTED AT THESE LOCATIONS.
12. PRIOR TO PLACING STRUCTURAL FILL, THE EXPOSED SOILS SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES; BROUGHT TO WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT FOR GRANULAR SOILS AND SLIGHTLY ABOVE OPTIMUM FOR FINE–GRAINED SOILS. EXPOSED SOILS SHALL THEN BE COMPACTED TO AT LEAST 95 % OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D–1557.
13. STRUCTURES AND CONCRETE FLATWORK SHALL BE ON A 6–INCH LAYER OF COMPACTED GRAVEL. THE LAYER OF COMPACTED GRAVEL SHALL CONSIST OF TYPE G ROAD BASE WITH A 1–INCH MAXIMUM PARTICLE SIZE AS SPECIFIED. THE GRAVEL LAYER SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM–D1557.
14. CONTRACTOR SHALL INSTALL HIGH DENSITY FOAM INSULATION (BLUE BOARD) IN CONCRETE VAULTS USING HILTI IDP POLY INSULATION ANCHORS. ANCHOR SHALL BE PLACED NEAR EACH CORNER OF THE BOARD INSULATION AND A MINIMUM OF TWO ROWS OF THREE ANCHORS BE INSTALLED PER SHEET. ON SMALLER SHEETS ENOUGH ANCHORS SHALL BE SUPPLIED TO SUFFICIENTLY SUPPORT THE INSULATION.
15. CONTRACTOR SHALL APPLY ECOBASE II WATERPROOFING MEMBRANE BY EPRO WATERPROOFING SYSTEMS ON ALL WALLS, ROOF AND GRADE RINGS ON STRUCTURES PRIOR TO BACK FILL.
16. COAT THE BOTTOM 6" OF ALL MISC METALS IN CONTACT WITH CONCRETE FLOORS IN ACCORDANCE WITH SECTION 09900 – COATINGS AND PAINTING.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

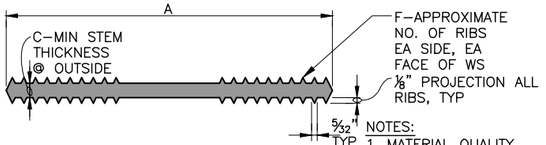
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN M. ROBLEZ DESIGN
DRAWN R. GARCIA DRAWN
REVIEW CHECKED M. COLLINS APPROVED M. ROBLEZ

STRUCTURAL
GENERAL STRUCTURAL NOTES
DATE: FEBRUARY 2010
PROJECT NUMBER 010–08–03

DRAWING NO. GS–1
SHEET 89 OF 110

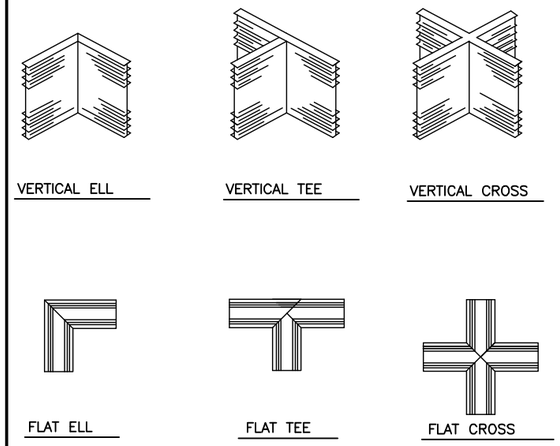


FLATSTRIP WATERSTOP

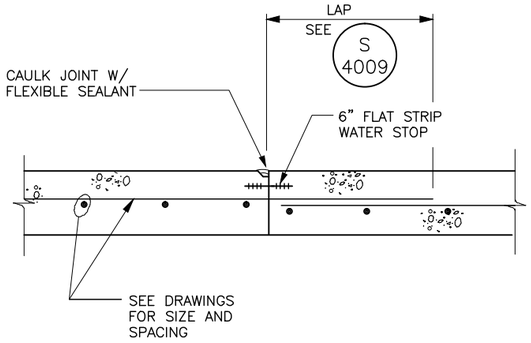
SIZE	A	B	C	D	E	F
4"x3/16"	4"	3/16"	3/16"	3/4"	1/4"	4
6"x3/8"	6"	3/8"	3/8"	7/8"	1/4"	6
9"x3/8"	9"	3/8"	3/8"	1"	1/4"	8

NOTES:
1. MATERIAL QUALITY PER SPECIFICATIONS.
2. DIM REQUIREMENTS INDICATED SHOULD BE GIVEN TO SUPPLIERS PRIOR TO PLACING ORDERS.
3. NON–ROUND CENTER BULBS SHALL HAVE A MIN OUTSIDE DIM OF 'D'.

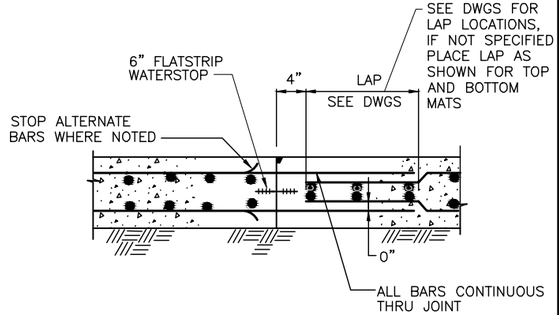
WATERSTOP
NTS — S 4001



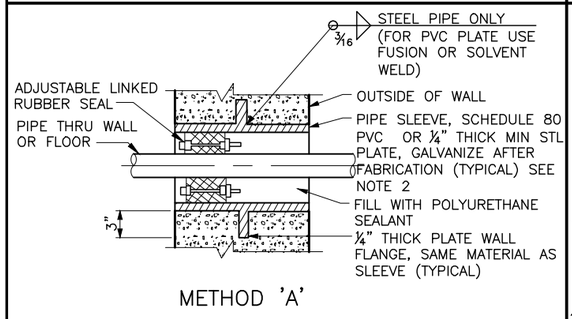
FLATSTRIP WATERSTOPS
NTS — S 4002



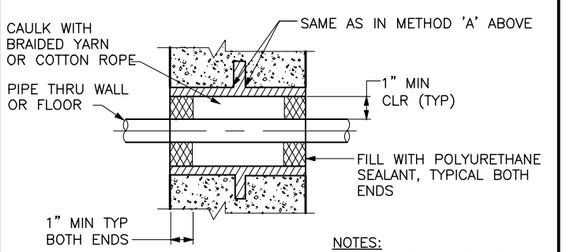
FORMED FLOOR JOINT DETAIL
NTS — S 4003



SLAB CONSTRUCTION JOINT
NTS — S 4004



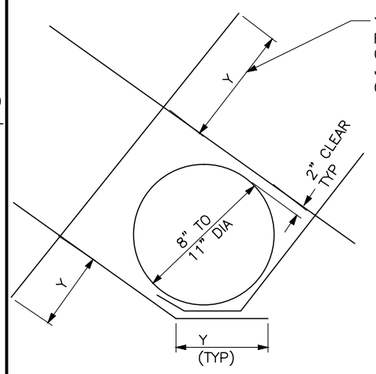
METHOD 'A'



METHOD 'B'

NOTES:
1. THESE SLEEVED PIPE DETAILS ARE TO BE USED IN DRY WALLS ONLY.
2. ELIMINATE SLEEVE IN CORE DRILLED WALLS.

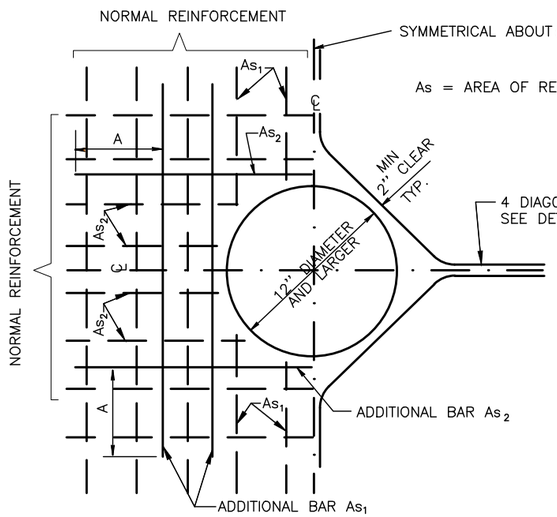
SLEEVED PIPE OPENING
NTS — S 4005



BAR SIZE	Y GRADE 60
#4	15"
#5	21"
#6	24"
#7	27"
#8	36"
#9	42"

NOTES:
1. CUT NORMAL REINFORCEMENTS 2" CLEAR OF OPENING.
2. DIAGONAL BARS TO BE PLACED:
   A) AT CENTERLINE OF WALL OR SLAB WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
   B) AT EACH FACE OF WALL OR SLAB WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.
3. UNLESS OTHERWISE NOTED, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINFORCING BAR CUT.
4. THIS DETAIL TO BE USED ONLY WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER DETAIL IS SPECIFIED.

ADDITIONAL REINFORCEMENT AT CIRCULAR OPENINGS (8" – 11" DIA)
S 4006



BAR SIZE	A GRADE 60
#4	15"
#5	21"
#6	24"
#7	27"
#8	36"
#9	42"
#10	48"

1. CUT NORMAL REINFORCEMENT AT OPENINGS:
   AS_1 AND AS_2 = 1/2 AREA OF CUT BARS TO BE ADDED ON EACH SIDE OF OPENING
2. ADDITIONAL BARS AS_1 AND AS_2 TO BE PLACED:
   a) AT ℄ OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED
   b) AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED
3. THIS DETAIL TO BE USED ONLY WHEN NO OTHER DETAIL IS INDICATED ON THE DRAWINGS

ADDITIONAL REINFORCEMENT AT CIRCULAR OPENINGS (12" DIA OR LARGER)
S 4007

RECORD DRAWINGS
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

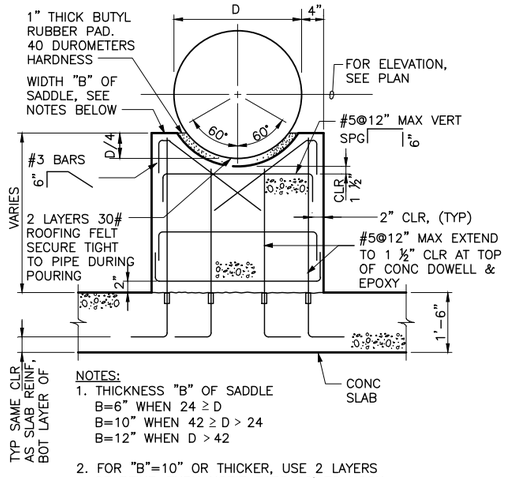
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN M. ROBLEZ DRAWN R. GARCIA
REVIEW CHECKED M. COLLINS APPROVED M. ROBLEZ

STRUCTURAL
GENERAL STRUCTURAL DETAILS – 1
DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

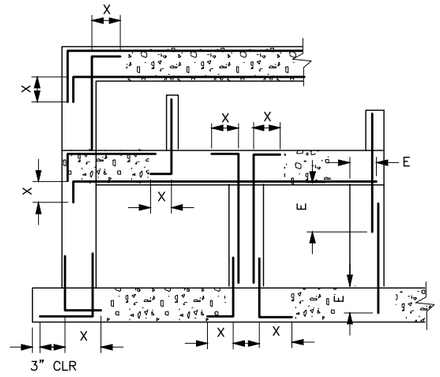
DRAWING NO. GS-2
SHEET 90 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GS02.dwg Nov16,2011 – 10:34am



NOTES:
1. THICKNESS "B" OF SADDLE
   B=6" WHEN 24 ≥ D
   B=10" WHEN 42 ≥ D > 24
   B=12" WHEN D > 42
2. FOR "B"=10" OR THICKER, USE 2 LAYERS OF REINF, TURN HORIZ BARS 90° TO HOOK AROUND VERTS ⊓ , 1½" CLR OF CONCRETE.

CONCRETE PIPE SUPPORT
NTS — S 4008



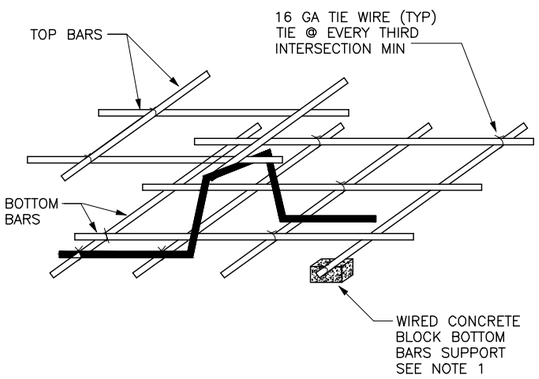
NOTES:
1. USE LAP LENGTHS AS DETERMINED FROM THESE TABLES UNLESS SHOWN OTHERWISE.
2. THE TABLES SHOWN ARE FOR f'C=4000 PSI AND fy =60,000 PSI.
3. MULTIPLY THE LAP & E SHOWN IN THESE TABLES BY 1.3 FOR WALL HORIZONTAL REBARS AND SLAB BARS WITH 12" OR MORE FRESH CONCRETE UNDERNEATH.
4. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, LAP LENGTH SHALL BE THE LARGER OF:
   EMBEDMENT LENGTH OF LARGER BAR
   LAP LENGTH OF SMALLER BAR
5. UNLESS NOTED OTHERWISE USE REBAR COUPLERS FOR SPLICES OF #11 AND LARGER BARS.
6. ALL DOWEL BARS SHALL EXTEND AN EMBEDMENT LENGTH E INTO ANOTHER MEMBER OR ACROSS A CONSTRUCTION JOINT UNLESS SHOWN TO SPLICE WITH OTHER BARS OR TO EXTEND TO THE FAR FACE OF THE MEMBER AND END WITH A STANDARD HOOK.

LENGTH (INCHES)			
BAR SIZE	HOOK X	LAP	EMBEDMENT E
#3	6"	18"	12"
#4	8"	18"	14"
#5	10"	23"	18"
#6	12"	28"	22"
#7	14"	33"	25"

DETAIL OF REINFORCEMENT – LAP LENGTHS							
BAR SIZE		#6 OR SMALLER	#7	#8	#9	#10	#11
CONC DESIGN STRENGTH		3000 PSI					
GR 40	TOP BAR *	34 DIA, MIN 1'-6"	3'-0"	3'-9"	4'-8"	6'-0"	7'-3"
	OTHER BAR	24 DIA, MIN 1'-0"	2'-0"	2'-8"	3'-4"	4'-4"	5'-2"
GR 60	TOP BAR *	49 DIA, MIN 2'-0"	4'-2"	5'-6"	7'-0"	8'-8"	10'-10"
	OTHER BAR	35 DIA, MIN 1'-6"	3'-0"	4'-0"	5'-0"	6'-6"	7'-9"
CONC DESIGN STRENGTH		3500 PSI					
GR 40	TOP BAR *	33 DIA, MIN 1'-6"	2'-9"	3'-6"	4'-4"	5'-6"	6'-8"
	OTHER BAR	24 DIA, MIN 1'-0"	1'-10"	2'-6"	3'-2"	4'-0"	4'-10"
GR 60	TOP BAR *	47 DIA, MIN 2'-0"	3'-10"	5'-2"	6'-6"	8'-2"	10'-0"
	OTHER BAR	34 DIA, MIN 1'-6"	2'-10"	3'-9"	4'-8"	6'-0"	7'-3"
CONC DESIGN STRENGTH		4000 PSI					
GR 40	TOP BAR *	32 DIA, MIN 1'-6"	2'-6"	3'-3"	4'-0"	5'-0"	6'-4"
	OTHER BAR	22 DIA, MIN 1'-0"	1'-9"	2'-4"	3'-0"	3'-8"	4'-6"
GR 60	TOP BAR *	45 DIA, MIN 2'-0"	3'-8"	4'-9"	6'-0"	7'-8"	9'-6"
	OTHER BAR	32 DIA, MIN 1'-6"	2'-8"	3'-6"	4'-4"	5'-6"	6'-9"

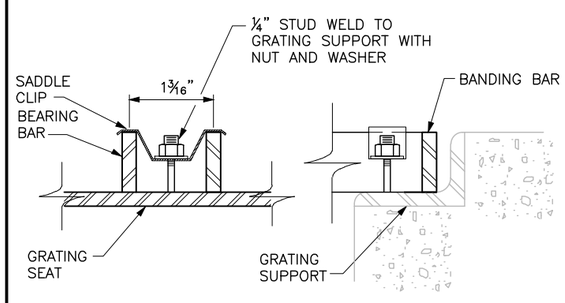
*TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR, IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

STANDARD 90° BAR HOOKS EMBEDMENT
NTS (LENGTH AND LAP LENGTHS) — S 4009



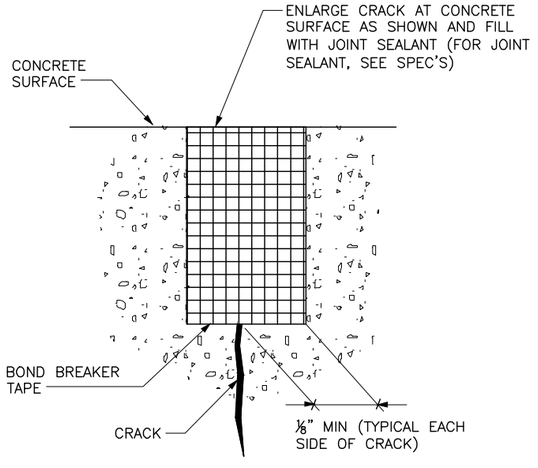
NOTE:
1. METAL BAR SUPPORTS, IF USED IN SLABS NOT ON GROUND, SHALL NOT MAKE CONTACT WITH FORMS.
2. REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY OTHER METAL INSTALLATION OR ACCESSORY EMBEDDED IN CONCRETE. A MINIMUM OF 2" CLEARANCE SHALL BE PROVIDED IN ALL CASES.

REINFORCEMENT SUPPORT
NTS — S 4010



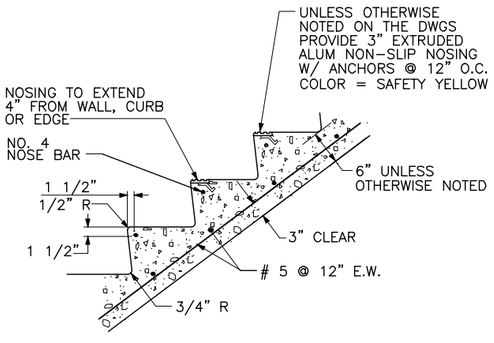
NOTES:
1. PROVIDE 4 CLIPS PER GRATING PANEL, APPROX. 4" FROM PANEL CORNERS, MAXIMUM CLIP SPACING AT 36" ON CENTER.
2. STUD, NUT, WASHER AND CLIP TO BE THE SAME MATERIAL AS THE GRATING, EXCEPT FOR ALUMINUM USE STAINLESS STEEL.

GRATING ANCHOR DETAIL
NTS — S 4011



NOTE:
PRIOR TO FILLING, STRUCTURES TO CONTAIN WATER SHALL HAVE ALL CRACKS REPAIRED AS SHOWN IN THIS DETAIL.

CONCRETE CRACK REPAIR
NTS — S 4012



NOTE:
1. TREAD SHALL RECEIVE A STEEL TROWEL FINISH. IMMEDIATELY THEREAFTER, THE SURFACE SHALL BE SLIGHTLY ROUGHENED BY DRAWING A HAIRBRUSH LIGHTLY OVER THE SURFACE AT A RIGHT ANGLE TO THE DIRECTION OF TRAFFIC TO PRODUCE A NON-SKID SURFACE.

CONCRETE STAIR DETAIL
NTS — S 4013

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

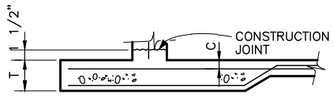
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN M. ROBLEZ DESIGN
DRAWN R. GARCIA DRAWN
REVIEW M. COLLINS CHECKED
APPROVED M. ROBLEZ

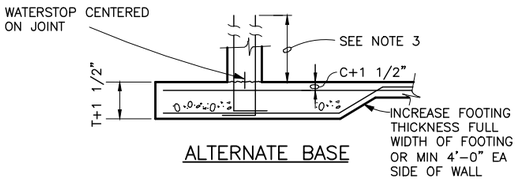
STRUCTURAL
GENERAL STRUCTURAL DETAILS – 2
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. GS-3
SHEET 91 OF 110

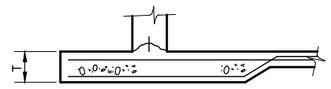
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GS03.dwg Nov16,2011 – 10:36am



TYPICAL BASE



ALTERNATE BASE

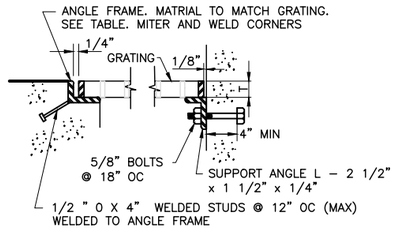


UNACCEPTABLE BASE

NOTES:
1. C–MIN CLR FOR REINF BARS, SEE GENERAL STRUCTURAL NOTES.
2. T–FOOTING THICKNESS AS DETAILED.
3. WHEN USING ALTERNATIVE BASE INCREASE DOWEL BARS TO PROVIDE SAME LAP LENGTH AS TYPICAL BASE.

WALL BASE CONSTRUCTION JOINT
NTS

S 4014



ALUMINUM GRATING

BEARING BARS: DEPTH T X 3/16" @ 1 3/16" OC
CROSS BARS @ 4" OC USE ALUM ANGLE SUPPORTS AND SS BOLTS

GALVANIZED STEEL GRATING

BEARING BARS: DEPTH T X 3/16" @ 1 3/16" OC
CROSS BARS @ 4" OC USE STEEL ANGLE SUPPORTS AND BOLTS GALVANIZE AFTER FABRICATION

STAINLESS STEEL GRATING

BEARING BARS: DEPTH T X 3/16" @ 1 3/16" OC
CROSS BARS @ 4" OC USE STAINLESS STEEL ANGLE SUPPORTS AND BOLTS

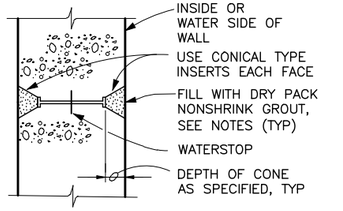
GRATING FRAME TABLE					
TYPE	GRATING DEPTH T	FRAME ANGLE	TYPE	GRATING DEPTH T	FRAME ANGLE
1	1"	1 3/4 x 1 1/4 x 1/4	5	2"	*2 1/2 x 2 1/2 x 1/2
2	1 1/4"	2 x 1 1/2 x 1/4	6	2 1/4"	2 1/2 x 2 1/2 x 1/4
3	1 1/2"	1 3/4 x 1 3/4 x 1/4	7	2 1/2"	3 x 2 1/2 x 1/2
4	1 3/4"	2 x 2 x 1/4	8		

GRATING OF DEPTH T AS NOTED ON DRAWINGS SHALL BE AS SPECIFIED HEREIN
ALL ENDS AND OPENINGS SHALL BE BANDED
ALL GRATINGS SHALL BE SECURED IN PLACE WITH REMOVABLE FASTENERS
WEIGHT OF GRATING SECTION SHALL NOT EXCEED 80 LBS

* OR USE 2 1/2 x 2 1/2 x 1/4 WITH 1/4" SHIM PLATE WELDED TO BOTTOM

GRATING DETAIL
NTS

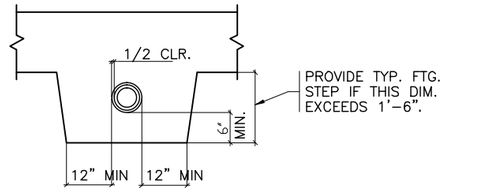
S 4015



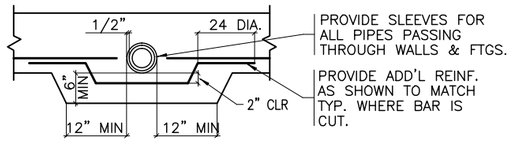
NOTES:
1. FOR FORM TIE HOLES ON OUTSIDE FACE OF WALL BELOW GRADE, FILL WITH NONSHRINK GROUT, (DRY PACK)
2. THE SPACING OF FORM TIES ON EXPOSED PORTIONS OF WALLS SHALL BE APPROXIMATELY EQUAL HORIZONTALLY AND VERTICALLY AND SHALL BE UNIFORM IN EACH DIRECTION.
3. WHERE CAULKING IS NOT SPECIFIED OR SHOWN, DRY PACK EXTERIOR TIE HOLES WITH NONSHRINK GROUT WITH COLOR OF GROUT TO MATCH COLOR OF CONCRETE AS CLOSE AS POSSIBLE.
4. DRY PACK METHOD SHALL BE AS SPECIFIED USING STEEL TOOLS.

FORM SNAP–TIE HOLE
NTS

S 4016



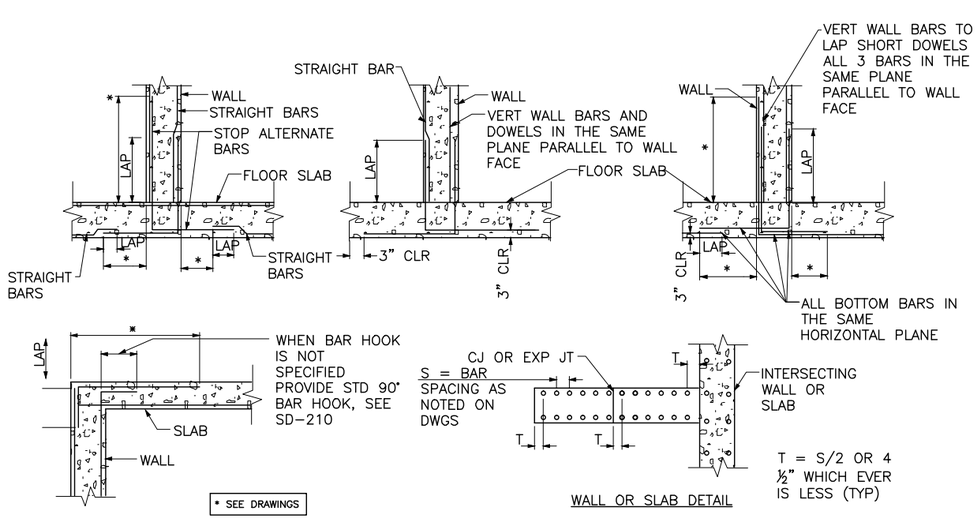
PIPE BELOW FTG.



PIPE THROUGH FTG.

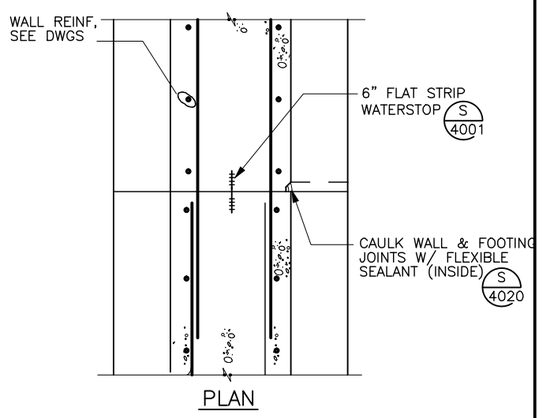
PIPE PERPENDICULAR TO FOOTING
NTS

S 4017



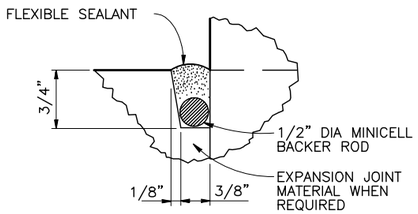
STANDARD FOR REINFORCEMET BAR DETAILS
NTS

S 4018



WALL & FOOTING JOINT DETAIL
NTS

S 4019



JOINT SEALANT
NTS

S 4020

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

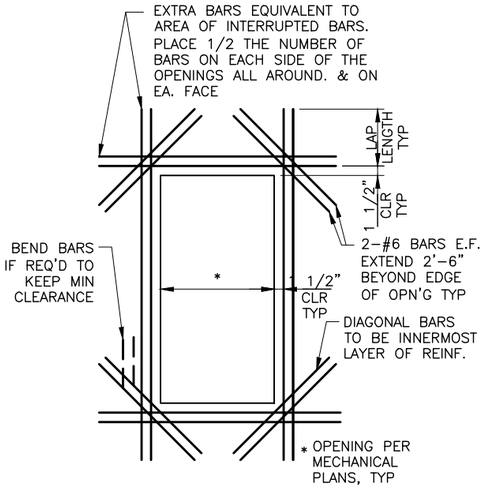
DESIGN M. ROBLEZ DESIGN
DRAWN R. GARCIA DRAWN
REVIEW M. COLLINS CHECKED
APPROVED M. ROBLEZ

STRUCTURAL
GENERAL STRUCTURAL DETAILS – 3

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. GS–4
SHEET 92 OF 110

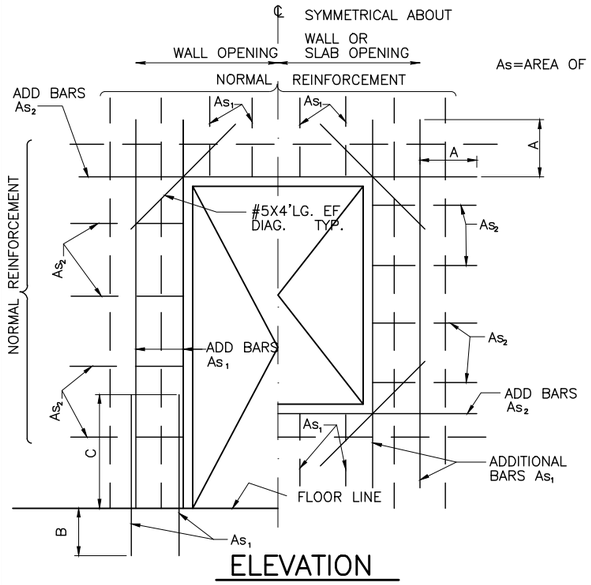
P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 – Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GS04.dwg Nov16,2011 – 10:37am



TYP REINF AT RECTAGULAR OPENINGS

NTS

S 4021



ELEVATION

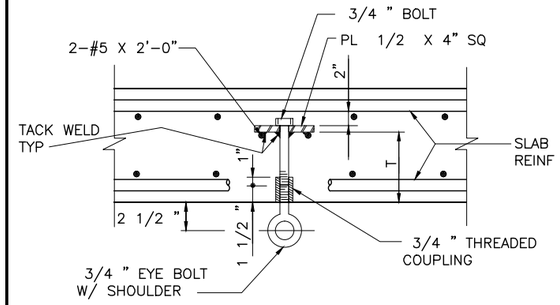
As=AREA OF REINFORCEMENT

BAR SIZE	GRADE 60		
	A	B	C
# 4	16"	12"	20"
# 5	20"	15"	26"
# 6	24"	18"	31"
# 7	30"	24"	39"
# 8	39"	30"	51"
# 9	49"	38"	65"
# 10	63"	48"	82"

1. CUT NORMAL REINFORCEMENT AT OPENING: As_1 AND As_2 = 1/2 AREA OF CUT BARS TO BE ADDED ON EACH SIDE OF OPENING
2. ADDITIONAL BARS As_1 AND As_2 TO BE PLACED:
   a) AT ℄ OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED
   b) AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED
3. THIS DETAIL TO BE USED ONLY WHEN NO OTHER DETAIL IS INDICATED ON THE DRAWINGS

ADDITIONAL REINFORCEMENT AROUND RECTANGULAR OPENINGS

S 4022



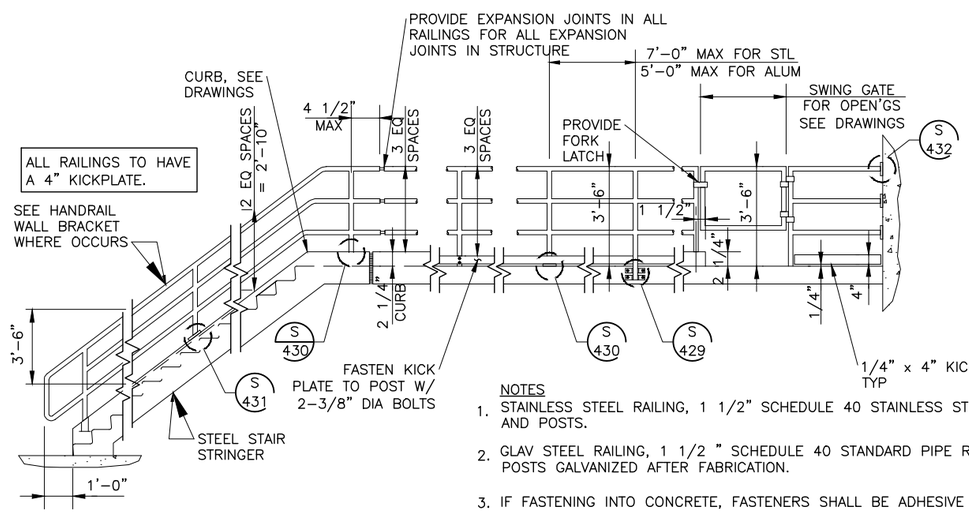
NOTES:

1. ALL METAL PARTS SHALL BE GALVANIZED STEEL
2. A CLEARANCE OF 2" MIN SHALL BE MAINTAINED BETWEEN THE LIFTING EYE ASSEMBLY AND THE REINFORCING STEEL
3. LOAD CAPACITY T = 4" 2000#, T = 5" 3000#, T = 6" 4000#

LIFTING EYE

NTS

S 4023



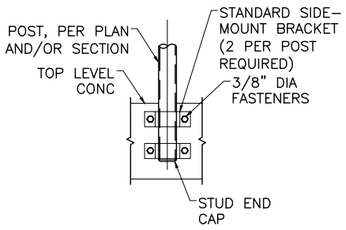
NOTES

1. STAINLESS STEEL RAILING, 1 1/2" SCHEDULE 40 STAINLESS STEEL RAILING AND POSTS.
2. GLAV STEEL RAILING, 1 1/2 " SCHEDULE 40 STANDARD PIPE RAILING AND POSTS GALVANIZED AFTER FABRICATION.
3. IF FASTENING INTO CONCRETE, FASTENERS SHALL BE ADHESIVE ANCHORS.
3. POST INSERTS NOT ALLOWED IN APPLICATIONS SUBJECT TO FREEZING.

3-RAIL RAILING

NTS

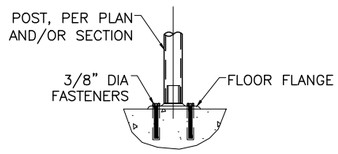
S 4024



SIDE MOUNT-ING BRACKET

1 1/2" = 1'-0"

S 429

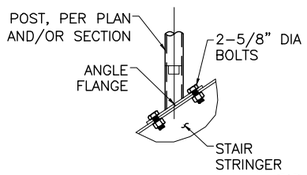


NOTE:
USE THIS DETAIL WHERE WALL THICKNESS IS LESS THAN 8".

FLOOR FLANGE

1 1/2" = 1'-0"

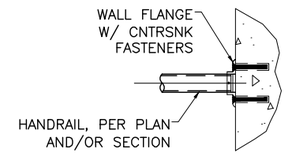
S 430



ANGLE FLANGE

1 1/2" = 1'-0"

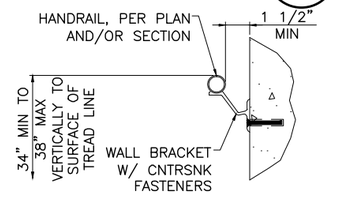
S 431



WALL FLANGE

1 1/2" = 1'-0"

S 432



HANDRAIL WALL

1 1/2" = 1'-0"

S 433

HANDRAIL ATTACHMENT

NTS

S 4025

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

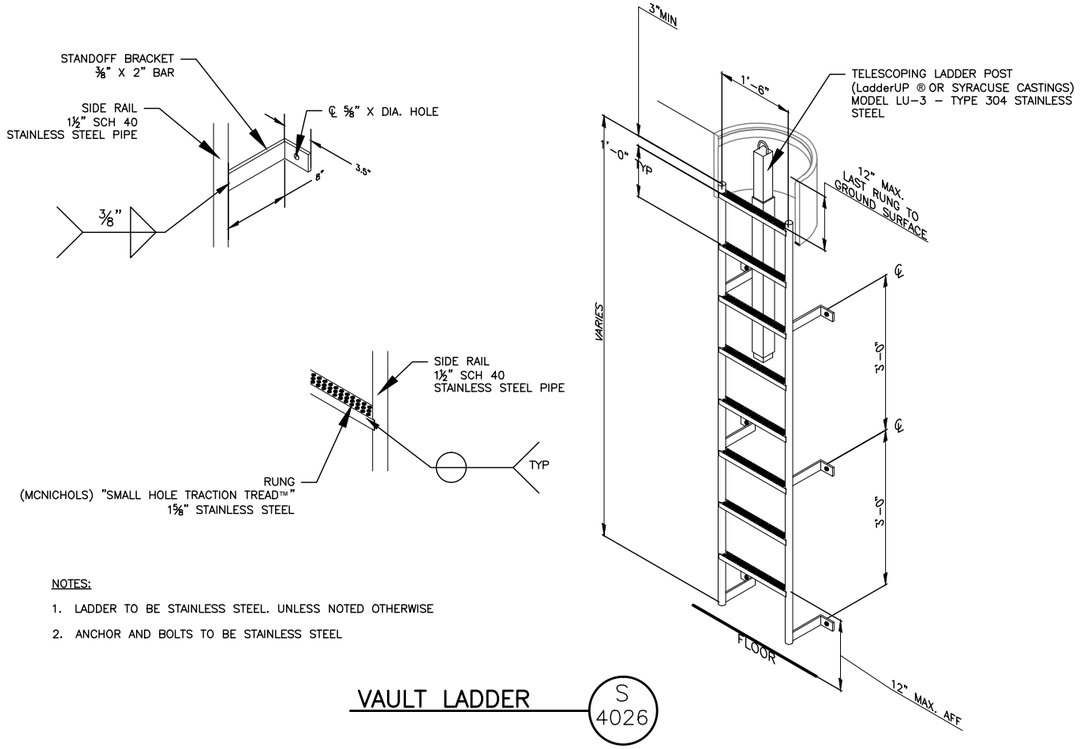
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN M. ROBLEZ
DRAWN R. GARCIA
REVIEW M. COLLINS
CHECKED
APPROVED M. ROBLEZ

STRUCTURAL
GENERAL STRUCTURAL DETAILS - 4

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

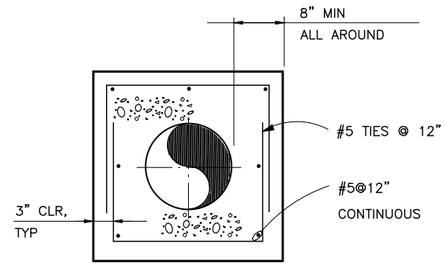
DRAWING NO. GS-5
SHEET 93 OF 110



NOTES:

1. LADDER TO BE STAINLESS STEEL. UNLESS NOTED OTHERWISE
2. ANCHOR AND BOLTS TO BE STAINLESS STEEL

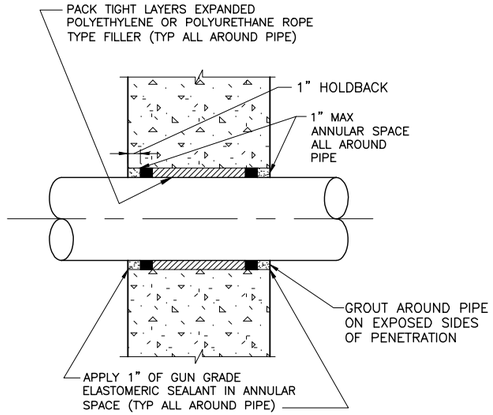
VAULT LADDER — S 4026



NOTES:

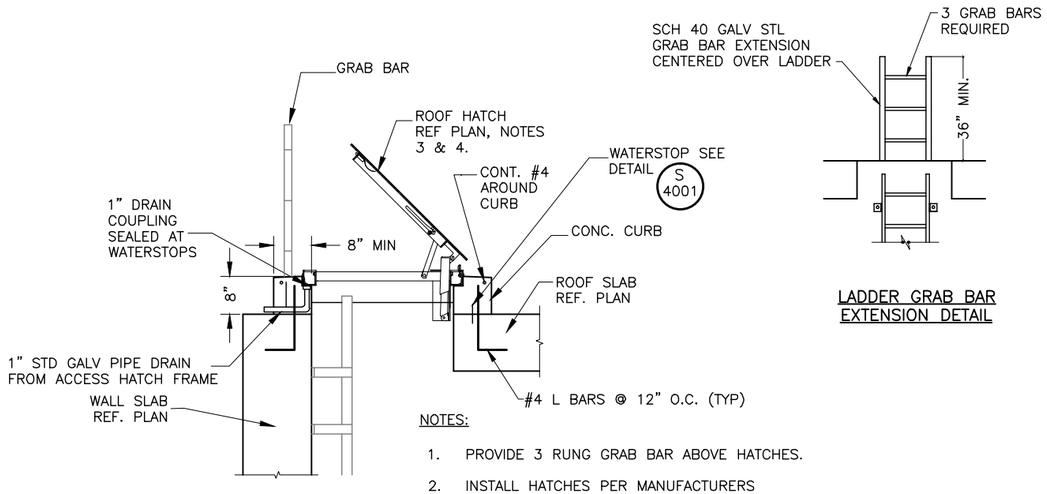
1. COAT ALL METAL SURFACES ENCASED IN CONCRETE IN ACCORDANCE WITH SECTION 09900 – COATING AND PAINTING.

CONCRETE ENCASEMENT — S 4027



PENETRATION SEAL — S 4028

NTS



NOTES:

1. PROVIDE 3 RUNG GRAB BAR ABOVE HATCHES.
2. INSTALL HATCHES PER MANUFACTURERS RECOMMENDATIONS & SPECIFICATIONS.
3. ALL HATCHES SHALL BE PRE-WIRED AT FACTORY FOR INTRUSION ALARMS. REFER TO SPECIFICATION 05500.
4. INSTALL HATCHES.
5. SEE SPECIFICATION SECTION 05500 FOR ACCEPTED HATCH MANUFACTURES

TYP MANWAY OPENING — S 4029

LADDER GRAB BAR EXTENSION DETAIL

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

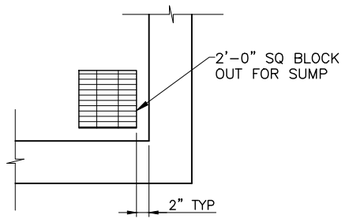
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN M. ROBLEZ DESIGN
DRAWN R. GARCIA DRAWN
REVIEW M. COLLINS CHECKED
APPROVED M. ROBLEZ

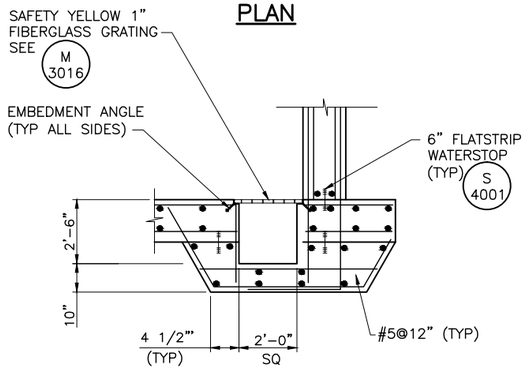
STRUCTURAL
GENERAL STRUCTURAL DETAILS - 5

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. GS-6
SHEET 94 OF 110

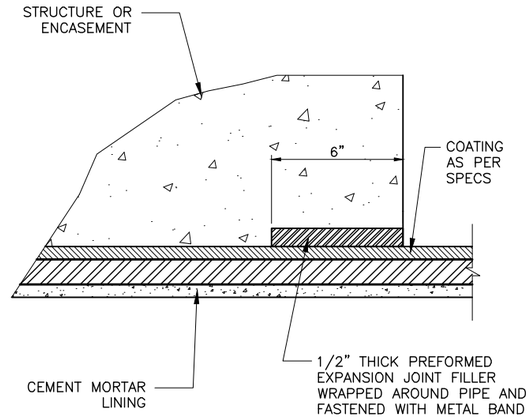


PLAN

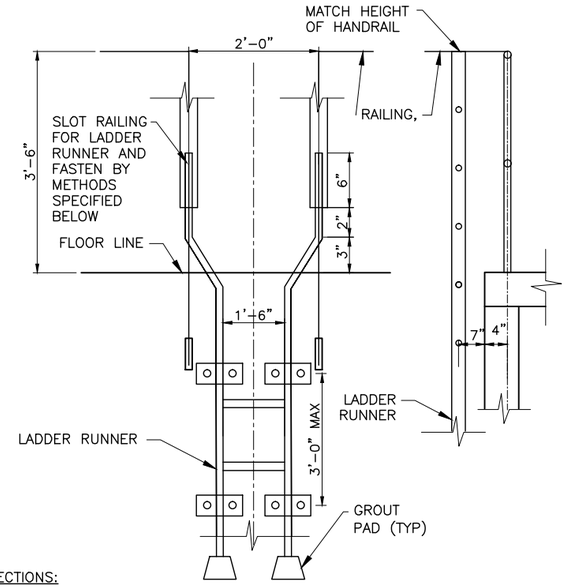


SECTION

SUMP DETAIL — S 4031
NTS



END OF ENCASEMENT — S 4032
NTS

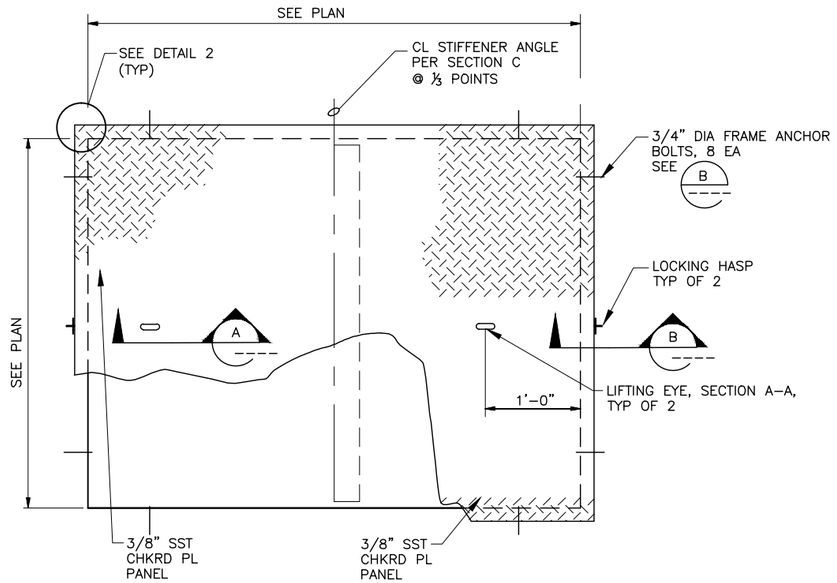


CONNECTIONS:

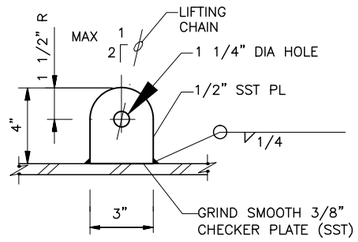
STEEL TO STEEL OR ALUMINUM TO ALUMINUM: WELDED CONNECTION, GRIND SMOOTH

STEEL TO ALUMINUM: DRILL HOLE THROUGH LADDER RUNNER AND RAILING FOR 1/2" PIN. INSERT PIN AND WELD BOTH ENDS AND GRIND SMOOTH. PIN SHALL BE THE SAME MATERIAL AS RAILING.

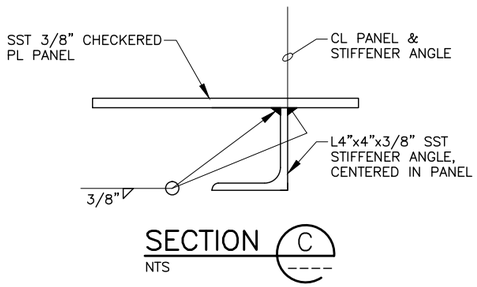
LADDER TO RAIL CONNECTIONS — S 4033
NTS



PLAN

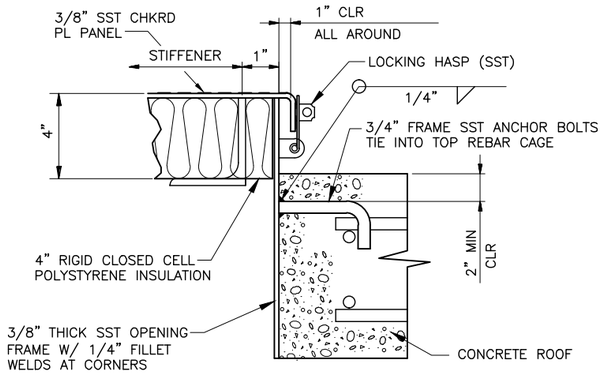


SECTION A
NTS

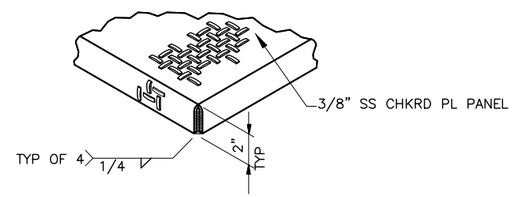


SECTION C
NTS

SST ROOF COVER PLATE — S 4034
NTS



SECTION B
NTS



CORNER DETAIL — 2
NTS

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

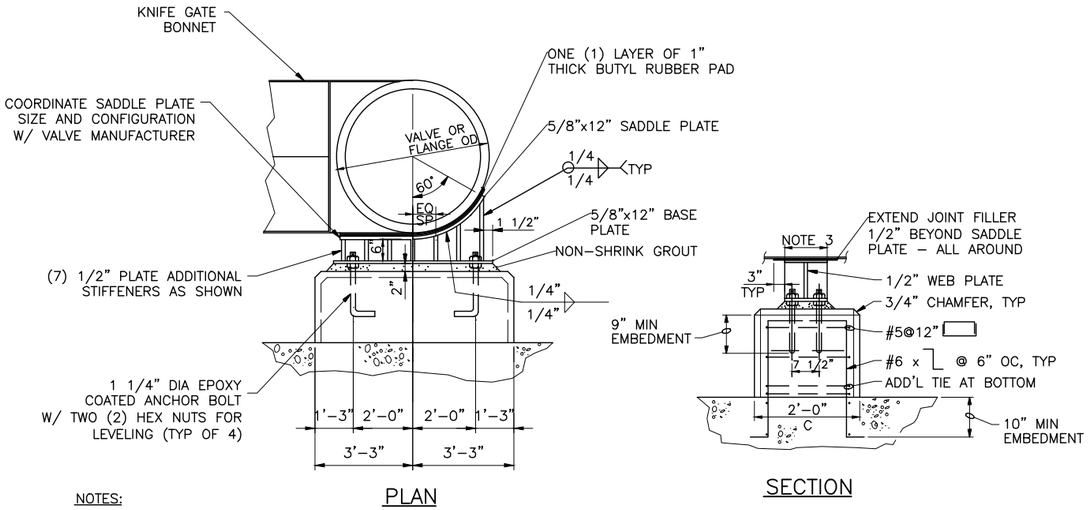
DESIGN M. ROBLEZ
DESIGN R. GARCIA
DRAWN
REVIEW M. COLLINS
CHECKED
APPROVED M. ROBLEZ

STRUCTURAL
GENERAL STRUCTURAL DETAILS - 6

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. GS-7
SHEET 95 OF 110

P:\Jordan Valley WCD\Southwest Aqueduct Reach 2\2.0 - Design Phase\2.10 Drawings\Record Drawings\sht\R0100803_GS07.dwg Dec28,2011 - 10:10am

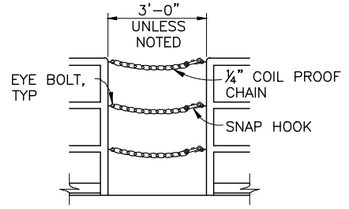


NOTES:

1. SEE PLAN FOR LOCATION OF PIPE SUPPORTS.
2. FINISH PAINT AS SPECIFIED.
3. WIDTH OF SUPPORT IS EQUAL TO FACE TO FACE DIM OF VALVE PLUS THICKNESS OF TWO PIPE FLANGES.

66" KNIFE GATE SUPPORT — S 4035

NTS

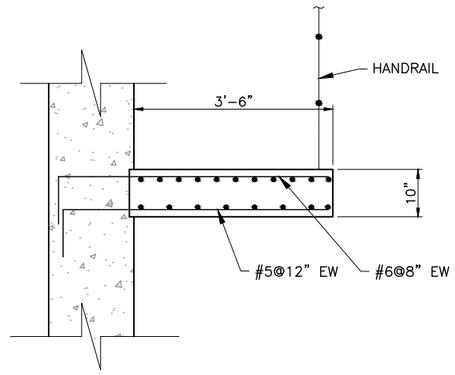


NOTES:

1. SAFETY CHAIN AND HARDWARE SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.

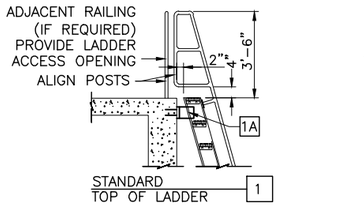
SAFETY CHAIN — S 4036

NTS (GALVANIZED & STAINLESS STEEL)

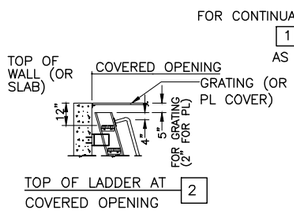


CANTILEVER DETAIL — S 4037

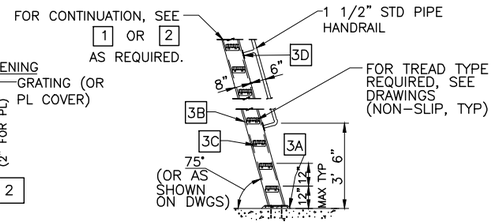
NTS



STANDARD TOP OF LADDER 1



TOP OF LADDER AT COVERED OPENING 2

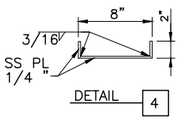


SHIPS LADDER 3

ALUMINUM SHIPS LADDER W/ SS FASTENERS — S 4038

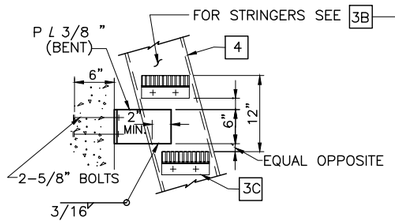
STAINLESS STEEL SHIPS LADDER W/ SS FASTENERS — S 4039

GALVANIZED STEEL SHIPS LADDER W/ GALV FASTENERS — S 4040

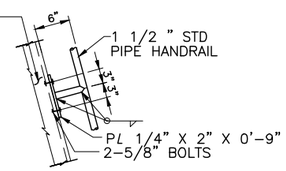


DETAIL 4

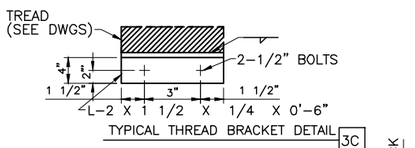
3B STRINGERS { ALUM LADDER: C8 X 6.48
GALVANIZED STL LADDER: C8 X 11.5
STAINLESS STEEL LADDER: PROVIDE FABRICATED CHANNELS PER DET 4



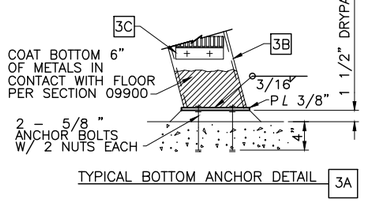
TYPICAL LADDER BRACKET DETAIL 1A



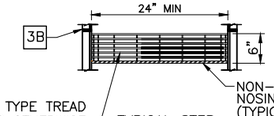
HANDRAIL CONNECTION DETAIL 3D



TYPICAL THREAD BRACKET DETAIL 3C



TYPICAL BOTTOM ANCHOR DETAIL 3A



RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN M. ROBLEZ DESIGN
DRAWN R. GARCIA
REVIEW M. COLLINS CHECKED
APPROVED M. ROBLEZ

STRUCTURAL
GENERAL STRUCTURAL DETAILS - 7

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. GS-8
SHEET 96 OF 110

ELECTRICAL SYMBOLS LEGEND

	SELECTOR SWITCH 2 POSITION
TR	NORMALLY OPEN TIME DELAY CLOSING AFTER COIL ENERGIZED
TR	NORMALLY CLOSED TIME DELAY OPENING AFTER COIL ENERGIZED
W	INDICATOR LIGHT
⊗	REMOTE DEVICE CONNECTION
	CLOSED RELAY CONTACT
	OPEN RELAY CONTACT
□	TERMINAL TO EXTERNAL REMOTE DEVICE
○	WIRE TERMINAL OR CONNECTION POINT
M	SINGLE PHASE MOTOR
	MOTOR OVERLOAD RELAY
	LIMIT SWITCH
CR	CONTROL RELAY
	TRANSFORMER
OFF / ON / REMOTE	SELECTOR SWITCH 3 POSITION MAINTAINED CONTACT
	LEVEL SWITCH CLOSES ON FALLING LEVEL
	LEVEL SWITCH CLOSES ON RISING LEVEL
	CONTROL SWITCH PUSHBUTTON, MOMENTARY CONTACT
	GROUND CONNECTION
F	FRACTIONAL HP MOTOR
	CONTROL STATION
J	JUNCTION BOX
	DUPLEX RECEPTACLE
	LIGHT FIXTURE TYPE AS INDICATED
F	FUSED DISCONNECT
$	SINGLE LIGHT SWITCH
	DISCONNECT UNFUSED SIZE NOTED
M	CONTACTOR/STARTER (NO. OF POLES SHOWN)
C.B.	CIRCUIT BREAKER (NO. OF POLES SHOWN)
	SOLENOID
	FLOW SWITCH CLOSES ON LOW FLOW
%	PRESSURE SWITCH CLOSES ON RISING PRESSURE

	THERMAL OVERLOAD RELAY
SPD	SURGE PROTECTION DEVICE
+ | −	DC BLOCKER
X / XXX	DETAIL DESIGNATION / DETAIL CALL OUT / SHEET REFERENCE
	CONDUIT EXPOSED
	CONDUIT RUN UNDERGROUND OR IN CONCRETE
	BARE COPPER WIRE IN SLAB OR UNDERGROUND GRID, SIZE AS NOTED
	TRANSFORMER W/ DELTA–Y AND GROUND
M	UTILITY METER
	UTILITY CT
HP	MOTOR, HORSEPOWER AS NOTED
	CIRCUIT BREAKER
	ELECTRICAL PANEL
	FUSE
2	MOTOR STARTER NEMA SIZE AS NOTED
30A	DISCONNECT SWITCH SIZE AS NOTED
	RECEPTACLE
	INCANDESCENT FIXTURE
	POLE MOUNTED HID FIXTURE
	ELECTRICAL CONNECTION

TAG (I)	PLC DIGITAL INPUT
TAG (O)	PLC DIGITAL OUTPUT
TAG (A)	PLC ANALOG INPUT
TAG (A)	PLC ANALOG OUTPUT

GENERAL NOTES:

1. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH–IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO ENSURE NEC CODE CLEARANCE REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
2. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH–IN.
3. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH–IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
4. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH ELECTRICAL ROOMS OR SPACES; OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN THE OTHER AREAS.
5. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
6. FOR PACKAGE EQUIPMENT PROVIDED ON THE PROJECT, SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDED ALL NECESSARY ELECTRICAL INFORMATION TO ELECTRICAL SUBCONTRACTOR FOR INCLUSION WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS.
7. IF OTHER THAN FIRST NAMED EQUIPMENT IS USED, IT SHALL BE CAREFULLY CHECKED FOR ELECTRICAL REQUIREMENTS AND CONTROL REQUIREMENTS OF ALTERNATE EQUIPMENT. SHOULD CHANGES OR ADDITIONS OCCUR IN ELECTRICAL WORK, OR THE WORK OF OTHER CONTRACTORS BE REVISED BY THE ALTERNATE EQUIPMENT, THE COST OF ALL CHANGES SHALL BE BORNE BY THE CONTRACTOR.

EQUIPMENT GROUNDING CONDUCTORS

FUSE OR CB SIZE	SIZE (COPPER)
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0
1000	2/0
1200	3/0
1600	4/0
2000	250
2500	350

GROUNDING ELECTRODE CONDUCTOR SERVICE ENTRANCE OR SEPARATELY DERIVED SYSTEM

COPPER CONDUCTOR	WIRE SIZE
#2 OR SMALLER	#8
1 OR 1/0	#6
2/0 OR 3/0	#4
>3/0 THRU 350 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	1/0

FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NO.	VA	LAMP	MOUNTING	NOTES
F1	ENCLOSED INDUSTRIAL, FIBERGLASS HOUSING, WET LOCATION TWO LAMP FLUORESCENT 120 VOLT, INSTANT START ELECTRONIC BALLAST	LITHONIA METALUX HOLOPHANE	DMW 232 AR 120 GEB VT2–232DR–120V–EB81–WL–U EMS04YBBMP042EP1U	74	F32T8/ COOL WHITE	WALL OR CEILING AS SPECIFIED	
F2	EMERGENCY LIGHT WITH TWO HEADS, 90 MIN BATTERY POWER, WET LOCATION, 120 VAC	SURE–LITES	UMB16	16	20–16 HALOGEN LAMP	WALL	

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN D. MAXWELL DRAWN D. LAMPH

REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

ELECTRICAL

ELECTRICAL LEGENDS, SCHEDULES AND NOTES

DATE: FEBRUARY 2010 PROJECT NUMBER 010–08–03

DRAWING NO. E–1

SHEET 97 OF 110

KEY NOTES:

1. EXISTING SECONDARY POWER CONDUIT AND CABLE SHALL BE REMOVED IN CONJUNCTION WITH VAULT CONSTRUCTION. ROUTE NEW SECONDARY CONDUIT AND CONDUCTORS AROUND THE VAULT CONSTRUCTION AREA PER ONE-LINE DIAGRAM ON SHEET E-5 FROM THE TRANSFORMER TO THE PUMP STATION MOTOR CONTROL CENTER. CONTRACTOR SHALL INSTALL TRAFFIC RATED JUNCTION BOXES AS REQUIRED IN ORDER TO MAINTAIN LESS THAN 360 DEGREES OF CONDUIT BENDS.

2. EXISTING SECONDARY POWER CONDUIT AND CONDUCTORS TO BE REMOVED AND REPLACED.

3. EXISTING FIBER OPTIC CONDUIT AND CABLE SHALL BE REMOVED IN CONJUNCTION WITH VAULT CONSTRUCTION. ROUTE NEW FIBER OPTIC CONDUIT AND CABLE AROUND VAULT CONSTRUCTION AREA PER ONE-LINE CONTROL DIAGRAM ON SHEET E-6. CONTRACTOR SHALL INSTALL TRAFFIC RATED JUNCTION BOXES AS REQUIRED IN ORDER TO MAINTAIN LESS THAN 360 DEGREES OF CONDUIT BENDS. EXISTING 1" CONDUIT CONTAINS ONE 12-STRAND MULTIMODE FIBER OPTIC CABLE AND ONE UPS POWER CIRCUIT CONSISTING OF #12AWG BLACK, WHITE, AND GREEN CONDUCTORS. REPLACE WITH EQUIVALENT FIBER OPTIC CABLE; TERMINATE ALL STRANDS; AND USE #10AWG REPLACEMENT WIRE FOR THE UPS CIRCUIT. THERE IS ALSO A SPARE 1" CONDUIT AND A THIRD 1" CONDUIT WITH 4 #10AWG CONDUCTORS THAT ARE ABANDONED. REMOVE CONDUCTORS AND RETURN THEM TO OWNER. RESTORE THESE TWO CONDUITS AS EMPTY SPARES.

4. REFERENCE SHEET E-5 FOR MODIFICATIONS TO THE EXISTING MCC IN PUMP HOUSE AND FOR INFORMATION ABOUT INTERCONNECT VAULT 480 VOLT FEEDER CONDUIT AND CONDUCTORS.

5. REFERENCE SHEET E-6 FOR MODIFICATIONS TO EXISTING PANELBOARD "PH" IN PUMP HOUSE AND FOR INFORMATION ABOUT THE CONDUIT AND CONDUCTOR SIZES FOR THE METER VAULT POWER CIRCUITS.

6. ONE INCH CONDUIT WITH ONE #18 AWG T.S.P. TO OVERFLOW POND LEVEL TRANSMITTER. RESTORE CONDUIT AND REPLACE CABLE.

7. POWER TO EXISTING PUMP. REMOVE CONDUCTORS BEFORE EXCAVATION. RESTORE 1" CONDUIT AND 4 EACH #10 AWG (BROWN, ORANGE, YELLOW, GREEN) CONDUCTORS AFTER BACKFILL IS COMPLETE.

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Bowen Collins & Associates, Inc. Consulting Engineers

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN D. MAXWELL
DRAWN D. LAMPH
REVIEW
CHECKED D. STEWART
APPROVED D. MAXWELL

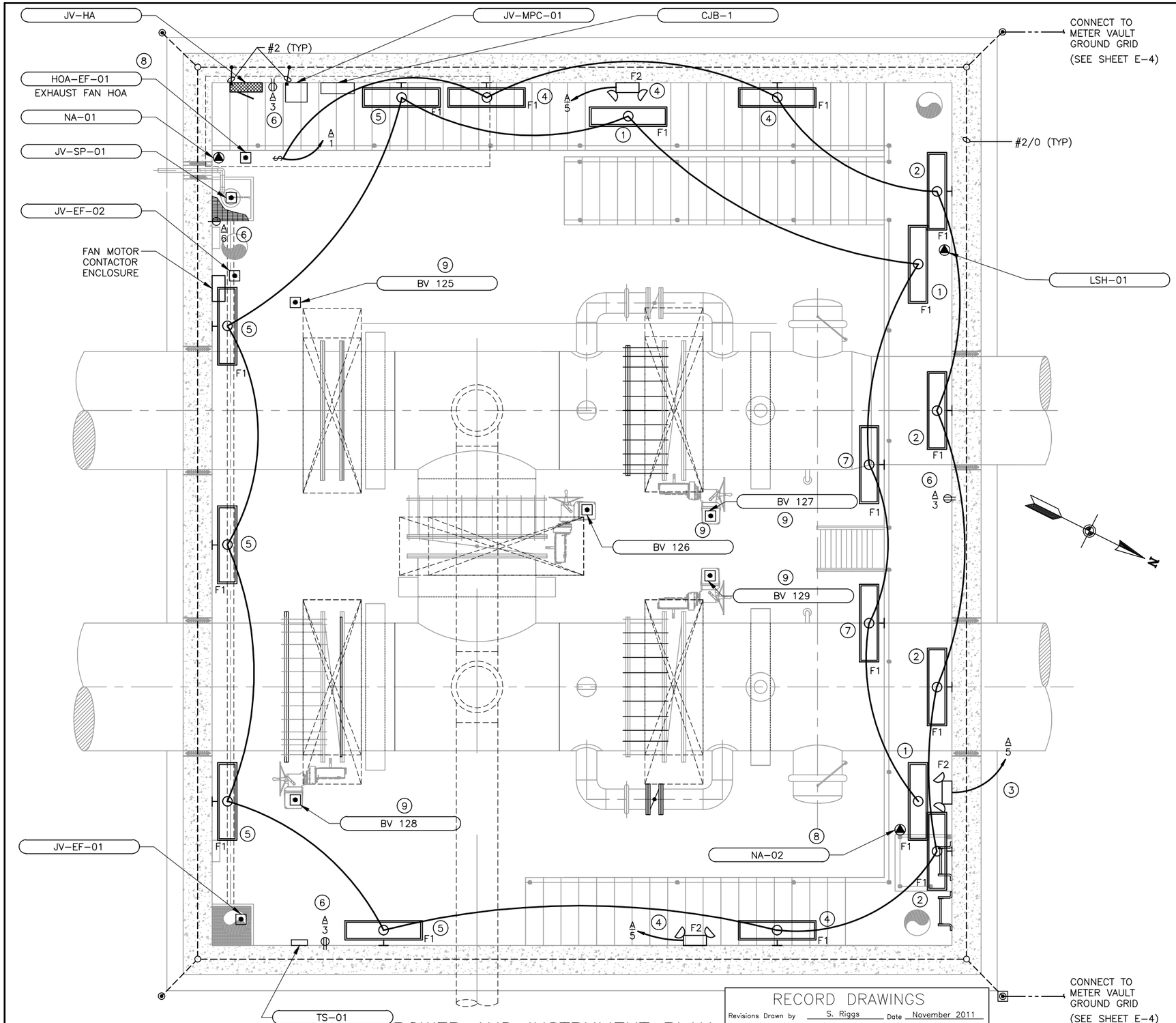
ELECTRICAL

JVWTP INTERCONNECTION AND METER VAULTS ELECTRICAL SITE PLAN

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. E-2

SHEET 98 OF 110



POWER AND INSTRUMENT PLAN

SCALE: 3/8"=1'-0"

GENERAL NOTES:

1. 2/0 AWG BARE COPPER GROUND RING SHALL BE BURIED NOT LESS THAN 30" BELOW THE EARTH'S SURFACE. CONNECT REBAR TO THE GROUND RING VIA 2/0 AWG BARE COPPER GROUND CABLE (GROUND RISERS). EQUIPMENT AND MISCELLANEOUS METALWORK SHALL BE CONNECTED TO THE GROUND RING WITH #2 AWG BARE COPPER GROUND CABLE. THE GROUND RING SHALL BE A MINIMUM OF 2 FEET FROM BUILDING FOUNDATION.
2. DRAWING SHOWS TYPICAL LOCATIONS OF GROUNDING SYSTEM COMPONENTS.
3. DRAWING SHOWS APPROXIMATE LOCATIONS AND MINIMUM NUMBER OF RISERS AND GROUNDING CONNECTIONS TO BE INSTALLED.
4. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING ELECTRICAL CONDUIT OFF PIPING WILL NOT BE PERMITTED.
5. PROVIDE INSULATED UNION AT ELECTRICAL CONDUIT CONNECTIONS TO SENSORS OR EQUIPMENT IN CONTACT WITH PIPING.
6. SEE ONE-LINE POWER DIAGRAM AND PANEL SCHEDULE JV-LP-A ON SHEET E-5 AND ONE-LINE CONTROL DIAGRAM ON SHEET E-7 FOR CONDUIT/CONDUCTOR NUMBER AND SIZE.
7. FIELD COORDINATE FINAL EQUIPMENT LOCATION AND CONFIRM WITH ENGINEER PRIOR TO INSTALLATION.
8. FOR ACTUATOR INFORMATION SEE DWG M-1 FOR MECHANICAL EQUIPMENT SCHEDULE.

KEY NOTES:

1. CEILING MOUNT FLUORESCENT FIXTURE UNDER STAIRWELL OR PLATFORM.
2. WALL MOUNT FLUORESCENT FIXTURE AT ABOUT 8' ABOVE FINISHED PLATFORM.
3. WALL MOUNT EMERGENCY FIXTURE AT ABOUT 16' ABOVE PLATFORM NEXT TO LADDER.
4. WALL MOUNT LIGHT FIXTURE AT ABOUT 7' ABOVE STAIRWAY.
5. WALL MOUNT FLUORESCENT FIXTURE AT ABOUT 12' ABOVE FLOOR.
6. MOUNT RECEPTACLES AT ABOUT 4' ABOVE FLOOR. SUMP PUMP RECEPTACLE SHALL BE A SIMPLEX RECEPTACLE WITHOUT GFCI PROTECTION. ALL OTHER RECEPTACLES SHALL BE DUPLEX GFCI RATED RECEPTACLES.
7. MOUNT FLUORESCENT FIXTURE TO PLATFORM. AVOID INTERFERENCE WITH LADDER AND PIPING.
8. EXHAUST FAN HOA SWITCHES, INTRUSION ALARMS AND LIGHT SWITCH ARE MOUNTED AT HATCH OPENING.
9. PROVIDE DC BLOCKERS ON ALL ELECTRICAL VALVE ACTUATORS AS SHOWN ON DETAIL 9, SHEET C-12.

PLAN SYMBOLS

GROUNDING	
◉	GROUND ROD
◎	GROUND ROD WITH GROUND WELL
○	GROUND RISER FROM THE GROUND PLATE
■ ●	BOLTED AND WELDED GROUND CONNECTIONS, RESPECTIVELY
- - - - - -	GROUND CABLE: EMBEDDED IN CONCRETE
—— - - ——	BURIED IN EARTH
———	EXPOSED

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN D. MAXWELL DESIGN D. LAMPH

REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

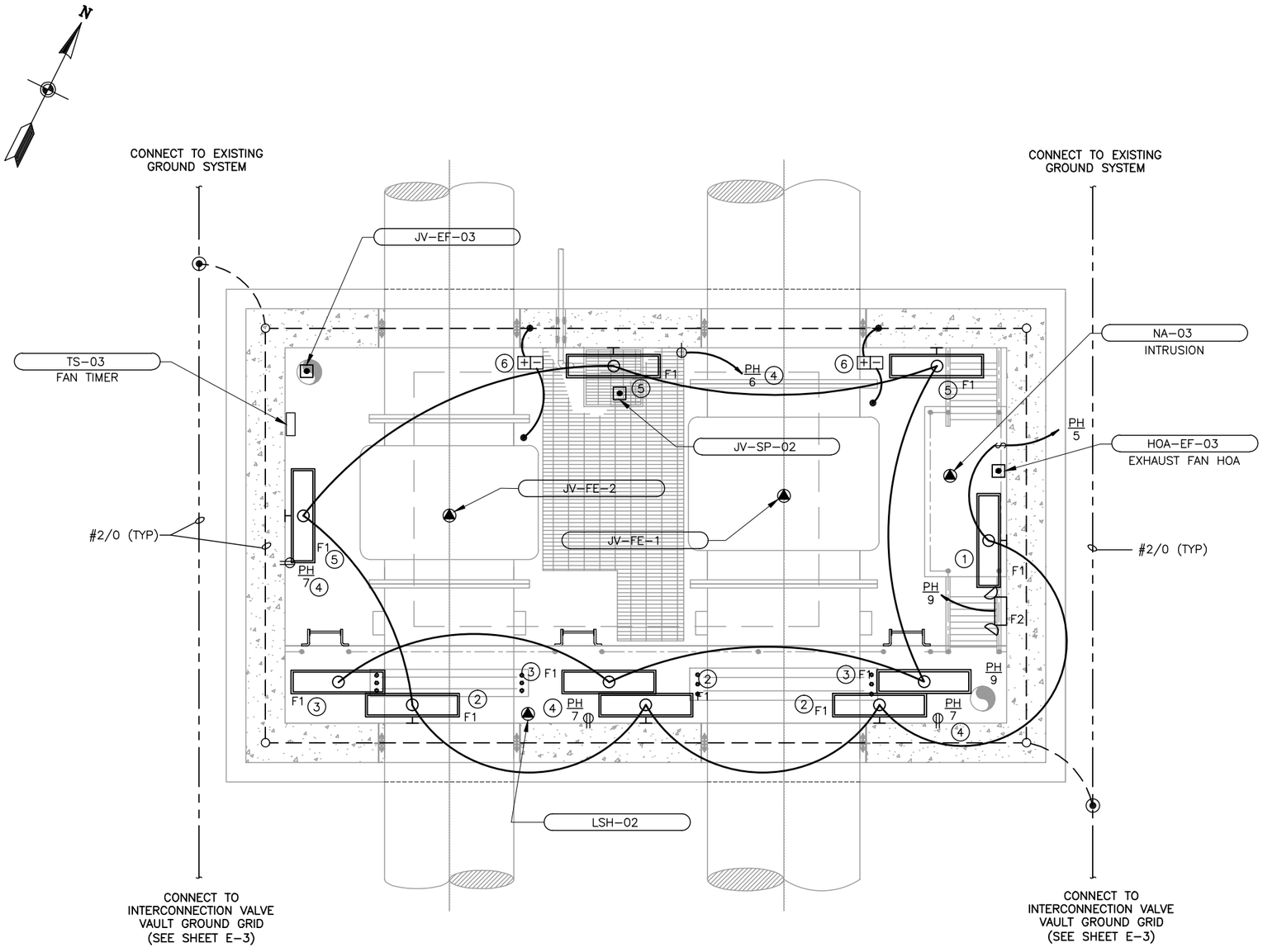
ELECTRICAL

JVWTP INTERCONNECTION VAULT ELECTRICAL PLAN

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. E-3

SHEET 99 OF 110



POWER, LIGHTING AND INSTRUMENT PLAN

3/8"=1'-0"

GENERAL NOTES:

1. 2/0 AWG BARE COPPER GROUND RING SHALL BE BURIED NOT LESS THAN 30" BELOW THE EARTH'S SURFACE. CONNECT REBAR TO THE GROUND RING VIA 2/0 AWG BARE COPPER GROUND CABLE (GROUND RISERS). EQUIPMENT AND MISCELLANEOUS METALWORK SHALL BE CONNECTED TO THE GROUND RING WITH #2 AWG BARE COPPER GROUND CABLE. THE GROUND RING SHALL BE A MINIMUM OF 2 FEET FROM BUILDING FOUNDATION.
2. DRAWING SHOWS TYPICAL LOCATIONS OF GROUNDING SYSTEM COMPONENTS.
3. DRAWING SHOWS APPROXIMATE LOCATIONS AND MINIMUM NUMBER OF RISERS AND GROUNDING CONNECTIONS TO BE INSTALLED.
4. SEE PANEL SCHEDULE PH ON SHEET E-6 AND ONE-LINE CONTROL DIAGRAM ON SHEET E-7 FOR CONDUIT/CONDUCTOR NUMBER AND SIZE.
5. FIELD COORDINATE FINAL EQUIPMENT LOCATION AND CONFIRM WITH ENGINEER PRIOR TO INSTALLATION.
6. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING ELECTRICAL CONDUIT OFF PIPING WILL NOT BE PERMITTED.
7. PROVIDE INSULATED UNION AT ELECTRICAL CONDUIT CONNECTIONS TO SENSORS OR EQUIPMENT IN CONTACT WITH PIPING.

KEY NOTES:

(1) WALL MOUNT FLUORESCENT FIXTURE AT ABOUT 7' ABOVE FINISHED LANDING. AVOID INTERFERENCE WITH LADDER OR USE THEREOF.

(2) WALL MOUNT FLUORESCENT FIXTURE AT ABOUT 8' ABOVE PLATFORM.

(3) CEILING MOUNT FLUORESCENT FIXTURE UNDER PLATFORM.

(4) MOUNT RECEPTACLES AT ABOUT 4' ABOVE FLOOR. SUMP PUMP RECEPTACLE SHALL BE A SIMPLEX RECEPTACLE WITHOUT GFCI PROTECTION. ALL OTHER RECEPTACLES SHALL BE DUPLEX GFCI RATED RECEPTACLES.

(5) WALL MOUNT FLUORESCENT FIXTURE AT ABOUT 8' ABOVE FINISHED FLOOR. AVOID INTERFERENCE WITH SUMP PUMP AND MAIN WATER PIPING.

(6) CONNECT GROUND GRID TO MAGMETER THROUGH DC BLOCKING DEVICES AS SHOWN ON DETAILS 7, 8 AND 9 OF SHEET C-12 (SIMILAR). MOUNT DC BLOCKING DEVICE ON WALL.

PLAN SYMBOLS

GROUNDING	
◉	GROUND ROD
◎	GROUND ROD IN GROUND WELL
○	GROUND RISER FROM THE GROUND PLATE (REBAR)
■ ●	BOLTED AND WELDED GROUND CONNECTIONS, RESPECTIVELY
— — —	GROUND CABLE: • EMBEDDED IN CONCRETE
— - — - —	• BURIED IN EARTH
———	• EXPOSED

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT INTENDED TO REPRESENT IN DETAIL THE EXACT LOCATION, TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN D. MAXWELL DRAWN D. LAMPH
REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

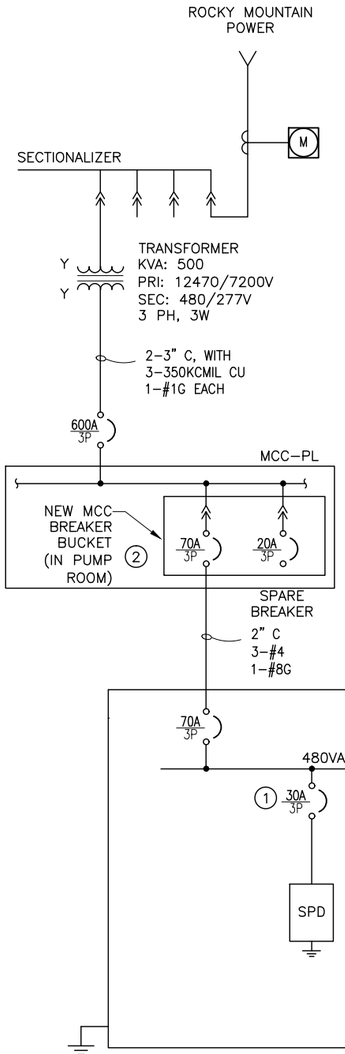
ELECTRICAL

METER VAULT ELECTRICAL PLAN

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. E-4

SHEET 100 OF 110



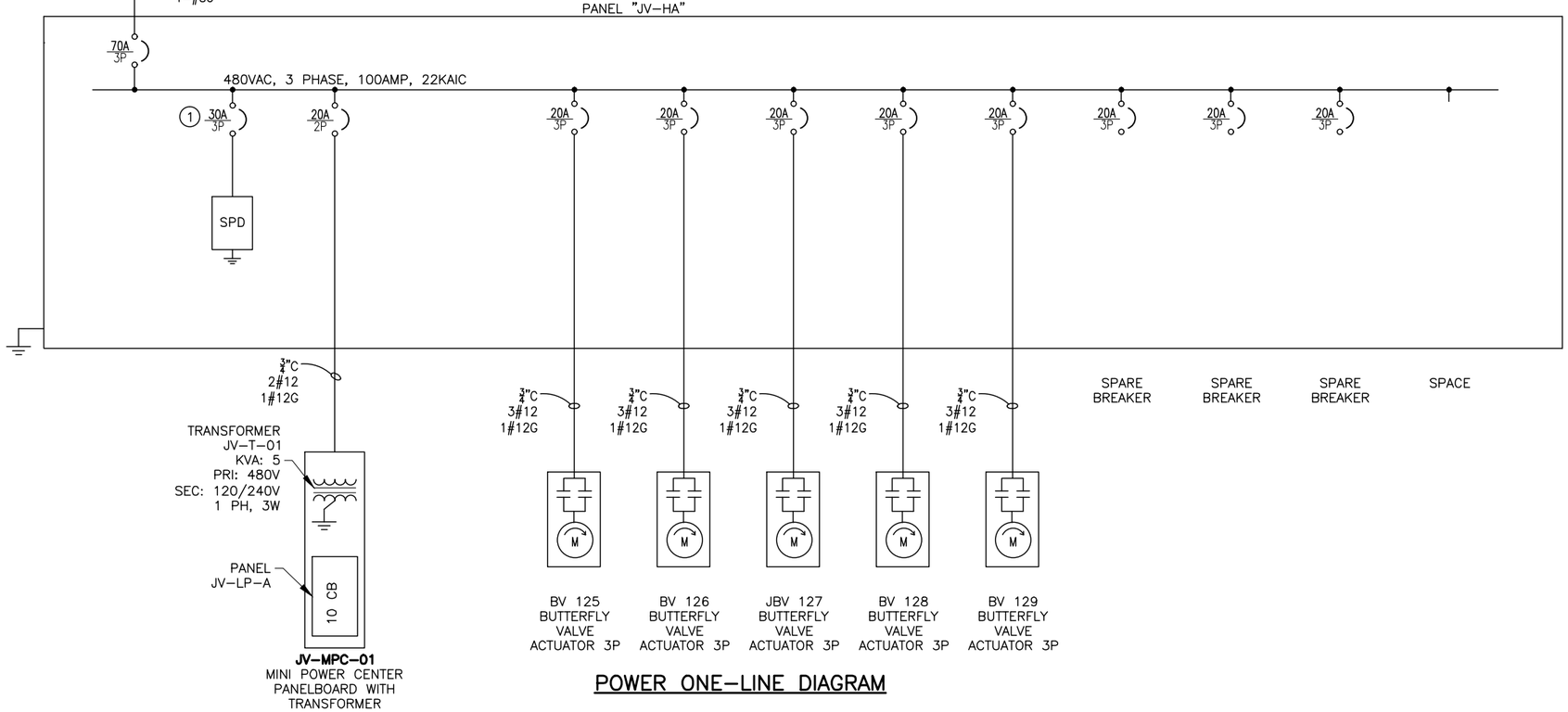
PANEL SCHEDULE JV-LP-A

LOCATION: INTERCONNECTION VALVE VAULT | MFGR: CH | 125 AMPS | VOLTS: 120/240
DIMENSIONS: 41"Hx14"Wx12"D | TYPE: MINI-POWER CENTER | M.L.O. | PHASE: 1
MOUNTING: WALL | NEMA: 3R | 60 M.C.B. | WIRES: 3
FEED: BOTTOM | 10,000 A.I.C.

BRKR A	BRKR P	DESCRIPTION	WIRE SIZE	CONT. WATTS	N-CONT. WATTS	NO	PHASE LOADS A CONT.	A N-CONT.	B CONT.	B N-CONT.	NO	N-CONT. WATTS	CONT. WATTS	WIRE SIZE	DESCRIPTION	BRKR A	BRKR P
20	1	VAULT LIGHTS	3/4", 2#12, 1#12G	1258		1	2,004	0			2		746	3/4", 2#12, 1#12G	EXHAUST FAN NO.1 & NO.2 (JV-EF-01 AND JV-EF-02))	20	1
20	1	VAULT OUTLETS	3/4", 2#12, 1#12G		540	3			0	540	4				SPARE	20	1
20	1	VAULT EMERGENCY LIGHTS	3/4", 2#12, 1#12G	48		5	421	0			6		373	3/4", 2#12, 1#12G	SUMP PUMP (JV-SP-01) RECEPTACLE	20	1
20	1	SPARE				7			0	0	8				SPARE	20	1
		SPACE				9	0	0			10				SPACE		
		TOTAL WATTS:		1306	540		2,425	0	0	540		0	1119				
		CONTINUOUS LOAD:		2425													
		CONTINUOUS LOAD *125%:		3,031		NOTE:											
		NON-CONTINUOUS LOAD:		540													
		DESIGN WATTS:		3,571													
		MIN. RATING (AMPS):		15		0											

KEY NOTES:

1. SIZE OF CIRCUIT BREAKER MAY VARY WITH DIFFERENT SURGE PROTECTIVE DEVICE (SPD) MANUFACTURER REQUIREMENTS AND THE SIZE OF CONDUCTORS THE MANUFACTURER USES FOR THE SPD.
2. THE CONTRACTOR SHALL SUPPLY AND INSTALL A NEW DUAL BREAKER BUCKET WITH TWO BREAKERS AS SHOWN ON THIS SHEET IN THE PUMP ROOM MOTOR CONTROL CENTER. THE NEW BUCKET WILL REPLACE THE EXISTING SPARE MOTOR START BUCKET. DELIVER EXISTING MCC BUCKET TO OWNER.



POWER ONE-LINE DIAGRAM

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN D. MAXWELL DESIGN
DRAWN D. LAMPH DRAWN
REVIEW D. STEWART CHECKED
D. MAXWELL APPROVED

ELECTRICAL
JVWTP INTERCONNECTION AND METER VAULTS ONE-LINE DIAGRAM
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. E-5
SHEET 101 OF 110

PANEL SCHEDULE "PH"

LOCATION: PUMPHOUSE | MFGR: SIEMENS | 125 AMPS | VOLTS: 120/240
DIMENSIONS: 43"Hx18"Wx14"D | TYPE: | M.L.O. | PHASE: 1
MOUNTING: SURFACE | NEMA: 3R | 40 M.C.B. | WIRES: 3
FEED: BOTTOM | 10,000 A.I.C.

	BRKR A	BRKR P	DESCRIPTION	WIRE SIZE	CONT. WATTS	N-CONT. WATTS	NO	PHASE LOADS A CONT.	PHASE LOADS A N-CONT.	PHASE LOADS B CONT.	PHASE LOADS B N-CONT.	NO	N-CONT. WATTS	CONT. WATTS	WIRE SIZE	DESCRIPTION	BRKR A	BRKR P	
(1)	20	1	LIGHTS				1	0	0			2				OUTLETS	20	1	(1)
(1)	20	1	LIGHTS				3			0	0	4				RTU	20	1	(1)
	20	1	METER VAULT LIGHTS	3/4"C, 2#12, 1#12G	740		5	1,114	0			6		374	3/4"C, 2#12, 1#12G	METER VAULT SUMP PUMP (JV-SP-02) RECEPTACLE	20	1	
	20	1	METER VAULT OUTLETS	3/4"C, 2#12, 1#12G	540		7			789	0	8		249	3/4"C, 2#12, 1#12G	METER VAULT EXHAUST FAN (JV-EF-03)	20	1	
	20	1	METER VAULT EMERGENCY LIGHT	3/4"C, 2#12, 1#12G	16		9	16	0			10				SPARE	20	1	
	20	1	SPARE				11			0	0	12				SPARE	20	1	
	–	–	SPACE				13	0	0			14				SPACE	–	–	
	–	–	SPACE				15			0	0	16				SPACE	–	–	
	–	–	SPACE				17	0	0			18				HEAT CABLE	20	1	
			TOTAL WATTS:		1296	0		1,130	0	789	0		0	623					
			CONTINUOUS LOAD:		1919														
			CONTINUOUS LOAD *125%:		2,399		NOTE:												
			NON-CONTINUOUS LOAD:		0														
			DESIGN WATTS:		2,399														
			MIN. RATING (AMPS):		10	0													

GENERAL NOTES:

1. PANELBOARD "PH" IN PUMPHOUSE IS EXISTING. CONTRACTOR SHALL VERIFY LOCATION AND TYPE OF EXISTING LOADS AND SUPPLY ALL BREAKERS AS SHOWN.
2. SEE SHEETS E-3 AND E-4 FOR EQUIPMENT LOCATION.

KEY NOTES:

(1) EXISTING LOAD.

RECORD DRAWINGS
Revisions Drawn by S. Riggs Date November 2011
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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN D. MAXWELL | DRAWN D. LAMPH | REVIEW CHECKED D. STEWART | APPROVED D. MAXWELL

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL

PUMP ROOM
PANEL SCHEDULE

DATE: FEBRUARY 2010 | PROJECT NUMBER 010-08-03

DRAWING NO. E-6
SHEET 102 OF 110

GENERAL NOTES:

1. REFER TO SHEETS E-3 AND E-4 FOR EQUIPMENT LOCATIONS.

KEY NOTES:

(1) 120 VOLT AC POWER FOR THE METER DISPLAYS WILL BE SUPPLIED FROM THE UPS CIRCUIT IN THE RTU PANEL.

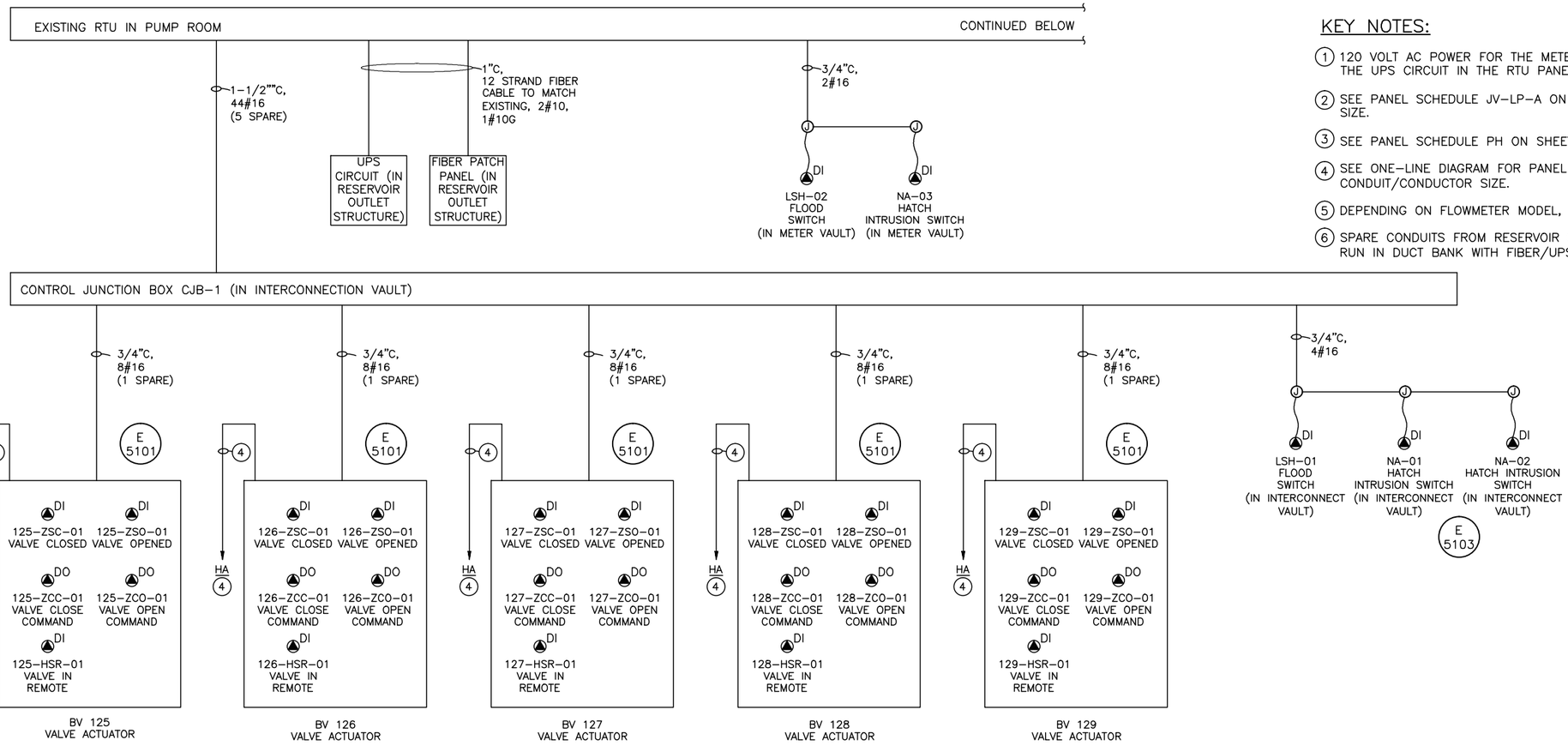
(2) SEE PANEL SCHEDULE JV-LP-A ON SHEET E-5 FOR CONDUIT/CONDUCTOR SIZE.

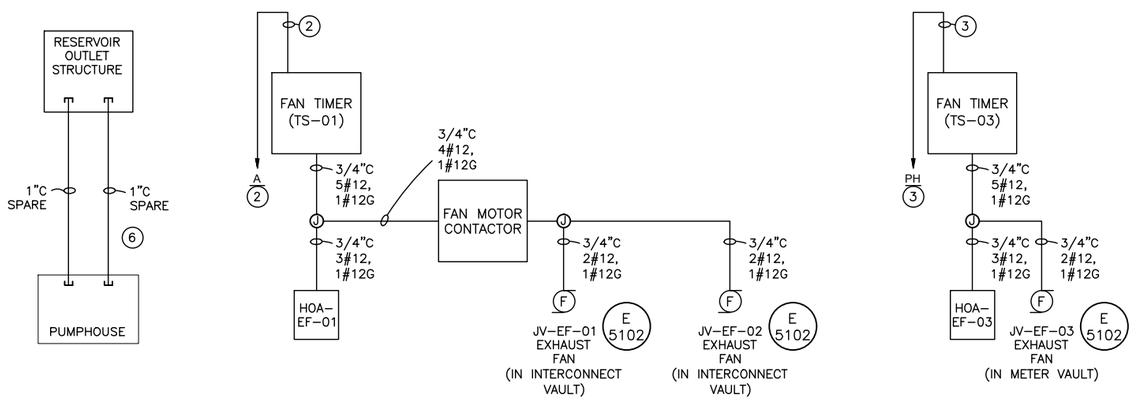
(3) SEE PANEL SCHEDULE PH ON SHEET E-6 FOR CONDUIT/CONDUCTOR SIZE.

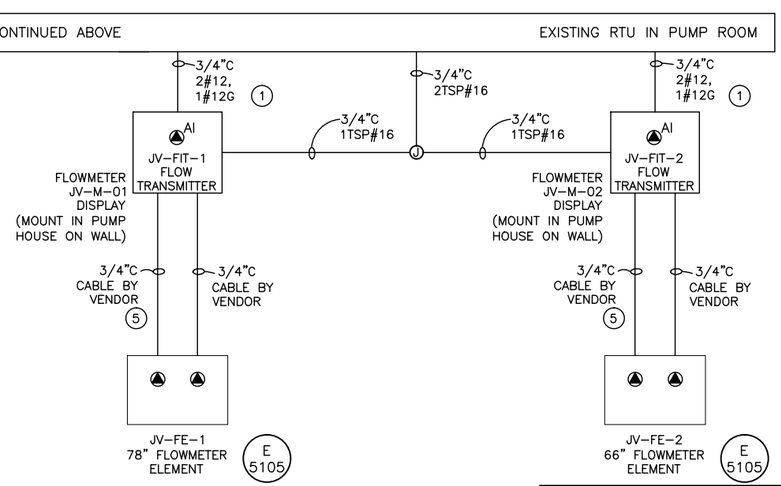
(4) SEE ONE-LINE DIAGRAM FOR PANEL JV-HA ON SHEET E-5 FOR CONDUIT/CONDUCTOR SIZE.

(5) DEPENDING ON FLOWMETER MODEL, SECOND CONDUIT MAY BE REQUIRED.

(6) SPARE CONDUITS FROM RESERVOIR OUTLET STRUCTURE TO PUMP HOUSE. RUN IN DUCT BANK WITH FIBER/UPS CIRCUIT CONDUIT PER SHEET E-2.







RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

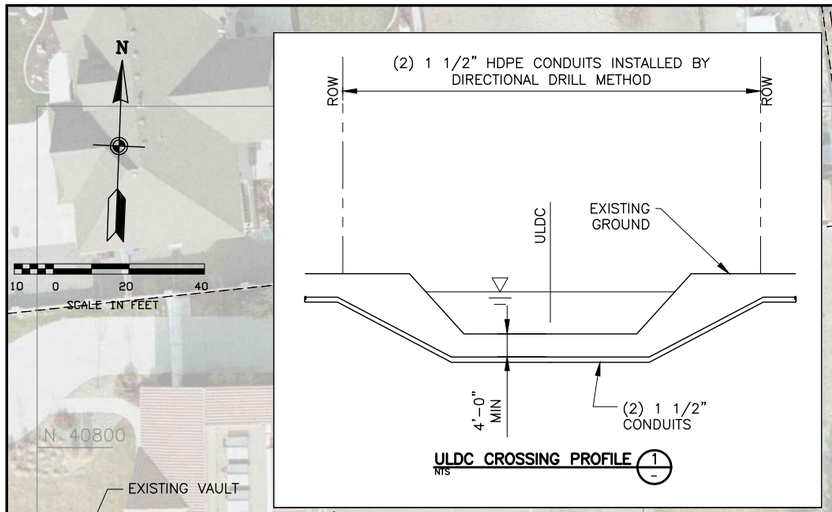
DESIGN D. MAXWELL DRAWN D. LAMPH
REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

ELECTRICAL
JVWTP INTERCONNECT. & METER VAULTS CONTROL ONE-LINE DIAGRAM

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. E-7

SHEET 103 OF 110



ULDC CROSSING PROFILE 1 NTS

KEY NOTES:

1. INSTALL 500 ± LF OF 2 EACH 1–1/2" CONDUITS IN PIPELINE EASEMENT FROM PULL BOX TO PUMP STATION PULL BOX BY DIRECTIONAL DRILLING METHODS.
2. INSTALL A 1" CONDUIT IN PIPE TRENCH FROM PANELBOARD JV–LP–B IN THE 13400 S MAINLINE VALVE VAULT INTO JA–2 VAULT. CONDUIT SHALL BE BORED INTO VAULT AND CAPPED. WATER SEAL ALL CONDUIT BORES.
3. INSTALL POWER CONDUIT AND CONDUCTORS TO RECTIFIER PER PANEL SCHEDULE JV–LP–B ON SHEET E–10.
4. INSTALL CATHODIC PROTECTION COMPONENTS AND CABLES PER CATHODIC PROTECTION DETAILS ON DRAWING C–8.
5. CONTRACTOR TO SIZE PULLBOXES. PULLBOX NOT SHOWN TO SCALE.
6. INSTALL 200 ± LF OF 2 EACH 1–1/2" CONDUIT FROM PULL BOX TO EXISTING PUMP STATION VAULT. ROUTE CONDUITS IN VAULT ON WALLS TO EXISTING 1" CONDUITS. PULL POWER CONDUCTORS FROM PANEL JV–HB TO 480 VOLT PANELBOARD IN PUMP STATION AS SHOWN ON SHEET E–10. LAND CONDUCTORS IN PUMP STATION ON EXISTING 60 AMP SPARE BREAKER. PULL FIBER FROM RTU IN 13400 SOUTH VAULT TO RTU IN PUMP STATION AS SHOWN ON SHEET E–11.
7. NOTIFICATION MUST BE GIVEN AT LEAST 24 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION WORK AND RE–NOTIFICATION OF RE–COMMENCEMENT OF WORK FOLLOWING ANY CESSATION OF WORK FOR MORE THAN FOUR DAYS MUST BE GIVEN. CALL ERIC ADAMS AND THE ULDC WATER MASTER. FAILURE TO DO SO MAY RESULT IN A $5,000 FINE.
8. CONTACT INFORMATION FOR FCE AND ULDC:
   - ERIC ADAMS. FCE, 801–756–0309
   - BRUCE NIEVEEN, P.E., FCE, 801–756–0309
   - MEL SPENCER, PRESIDENT, ULDC. 801–254–4257
   - ROSS PARKER, WATER MASTER, ULDC RIVERTON CANAL, 801–541–3005
9. ANY CHANGES IN DESIGN DRAWINGS AFTER THE ENCROACHMENT AGREEMENT HAS BEEN EXECUTED MUST BE REVIEWED AND ACCEPTED BY FCE AND ULDC.
10. WORK CANNOT INTERFERE WITH DELIVERY OF WATER. CONSTRUCTION WITHIN ULDC CORRIDORS MUST BE COMPLETED BETWEEN OCTOBER 15 AND APRIL 1.
11. ALL CONSTRUCTION MUST BE COMPLETED TO ULDC STANDARDS.
12. IF DISTURBED, CANAL OPERATION AND MAINTENANCE ROAD (O&M ROAD) MUST BE RETURNED TO PRE–CONSTRUCTION STATE OR BETTER, FOLLOWING CONSTRUCTION. O&M ROAD MUST BE AVAILABLE FOR USE BY ULDC PERSONNEL NO LATER THAN APRIL 1.
13. CANALS MAY COLLECT WATER DURING STORM EVENTS OR AT OTHER UNEXPECTED TIMES.
14. CONTRACTOR TO NOTIFY ERIC ADAMS OF FRANSON CIVIL ENGINEERS WHEN TRENCH PLUGS ARE INSTALLED. VERIFICATION OF TRENCH PLUG COMPLETION MUST BE PERFORMED BY FRANSON ENGINEERS BEFORE BACKFILLING. ERIC CAN BE REACHED AT 801–756–0309,

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN D. MAXWELL DESIGN D. LAMPH
REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

ELECTRICAL
13400 SOUTH MAINLINE VALVE & INTERCONNECTION VAULT ELECTRICAL PLAN

DATE: FEBRUARY 2010 PROJECT NUMBER 010–08–03

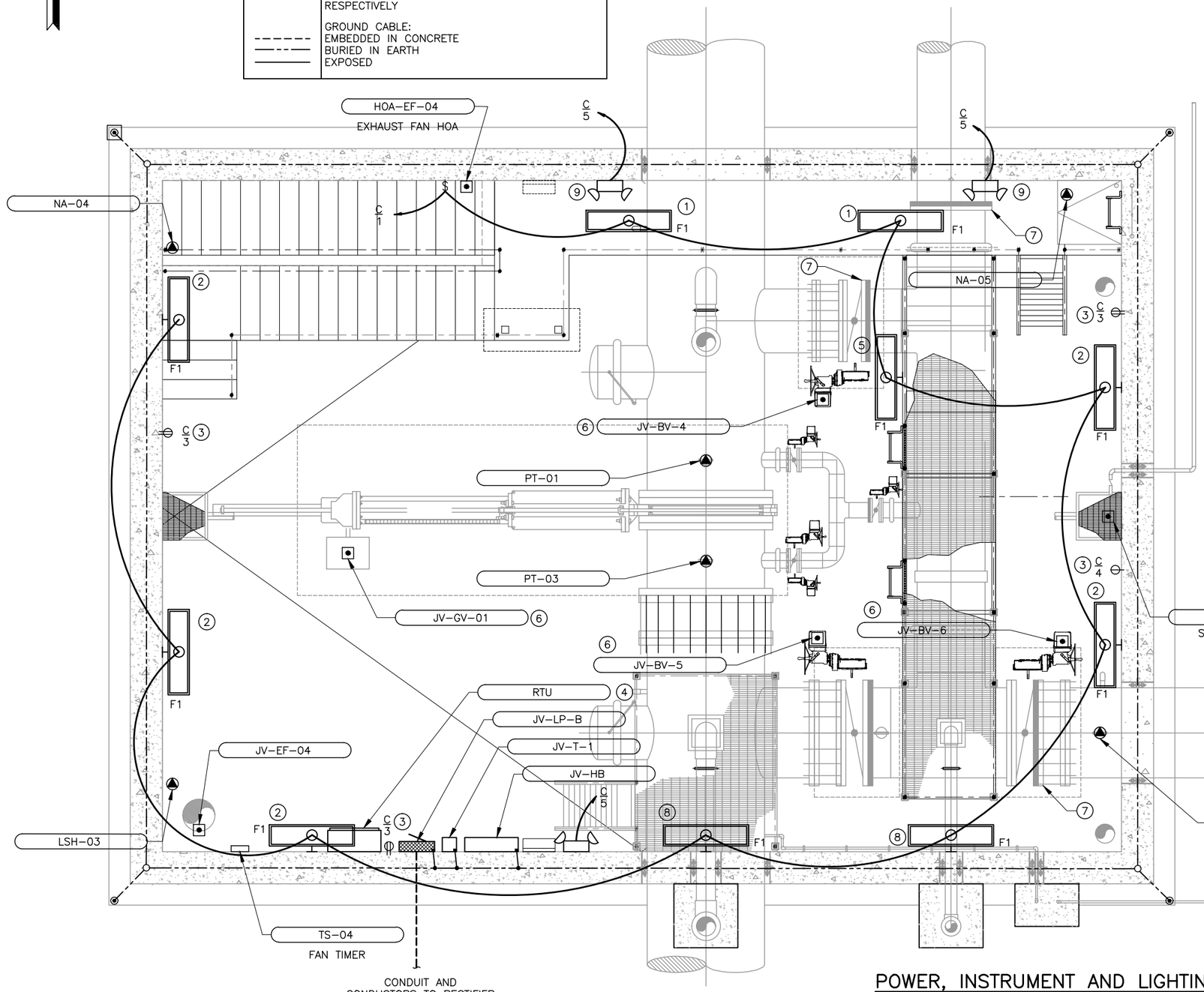
DRAWING NO. E–8

SHEET 104 OF 110

N

PLAN SYMBOLS

GROUNDING	
◉	GROUND ROD
◎	GROUND ROD WITH GROUND WELL
○	GROUND RISER FROM THE GROUND PLATE
■ ●	BOLTED AND WELDED GROUND CONNECTIONS, RESPECTIVELY
-------	GROUND CABLE: EMBEDDED IN CONCRETE
— - — - —	BURIED IN EARTH
———	EXPOSED



POWER, INSTRUMENT AND LIGHTING PLAN

3/8" = 1'–0"

GENERAL NOTES:

1. 2/0 AWG BARE COPPER GROUND RING SHALL BE BURIED NOT LESS THAN 30" BELOW THE EARTH'S SURFACE. CONNECT REBAR TO THE GROUND RING VIA 2/0 AWG BARE COPPER GROUND CABLE (GROUND RISERS). EQUIPMENT AND MISCELLANEOUS METALWORK SHALL BE CONNECTED TO THE GROUND RING WITH #2 AWG BARE COPPER GROUND CABLE. THE GROUND RING SHALL BE A MINIMUM OF 2 FEET FROM BUILDING FOUNDATION.
2. DRAWING SHOWS TYPICAL LOCATIONS OF GROUNDING SYSTEM COMPONENTS.
3. DRAWING SHOWS APPROXIMATE LOCATIONS AND MINIMUM NUMBER OF RISERS AND GROUNDING CONNECTIONS TO BE INSTALLED.
4. FIELD COORDINATE FINAL EQUIPMENT LOCATION AND CONFIRM WITH ENGINEER PRIOR TO INSTALLATION.
5. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING ELECTRICAL CONDUIT OFF PIPING WILL NOT BE PERMITTED.
6. PROVIDE INSULATED UNION AT ELECTRICAL CONDUIT CONNECTIONS TO SENSORS OR EQUIPMENT IN CONTACT WITH PIPING.

KEY NOTES:

(1) CEILING MOUNT FLUORESCENT FIXTURE ABOVE LANDING.

(2) WALL MOUNT FLUORESCENT FIXTURE AT ABOUT 12' ABOVE FLOOR.

(3) MOUNT RECEPTACLES AT ABOUT 4' ABOVE FLOOR. SUMP PUMP RECEPTACLE SHALL BE A SIMPLEX RECEPTACLE WITHOUT GFCI PROTECTION. ALL OTHER RECEPTACLES SHALL BE DUPLEX GFCI RATED RECEPTACLES.

(4) CONTRACTOR SHALL PROVIDE AND INSTALL A HOFFMAN A–36H3012GQRLP WITH A–36P30G BACK PANEL. BACK PANEL SHALL BE GIVEN TO OWNER AND ASSEMBLED BY OWNER. THE CONTRACTOR SHALL INSTALL ASSEMBLED BACK PANEL AND TERMINATE WIRE AND CABLE TO THE ASSEMBLY. PROGRAMMING BY OWNER.

(5) MOUNT FLUORESCENT FIXTURE TO WALKWAY STRUCTURE.

(6) PROVIDE DC BLOCKING DEVICE ON ALL ELECTRICAL VALVE ACTUATORS AS SHOWN ON DETAIL 9, SHEET C–12.

(7) PROVIDE DC BLOCKING DEVICE ACROSS FLANGES WITH INSULATING KITS AS SHOWN IN DETAIL 8 ON SHEET C–12.

(8) MOUNT FLUORESCENT FIXTURE AT ABOUT 5' ABOVE PLATFORM HEIGHT.

(9) MOUNT EMERGENCY FIXTURE AT ABOUT 7' ABOVE PLATFORM.

(10) MOUNT EMERGENCY FIXTURE AT ABOUT 7' ABOVE FINISHED FLOOR.

RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

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NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN D. MAXWELL DRAWN D. LAMPH

REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

ELECTRICAL

13400 SOUTH MAINLINE VALVE & INTERCONNECTION VAULT ELECTRICAL PLAN

DATE: FEBRUARY 2010 PROJECT NUMBER 010–08–03

DRAWING NO. E–9

SHEET 105 OF 110

PANEL SCHEDULE JV–LP–B

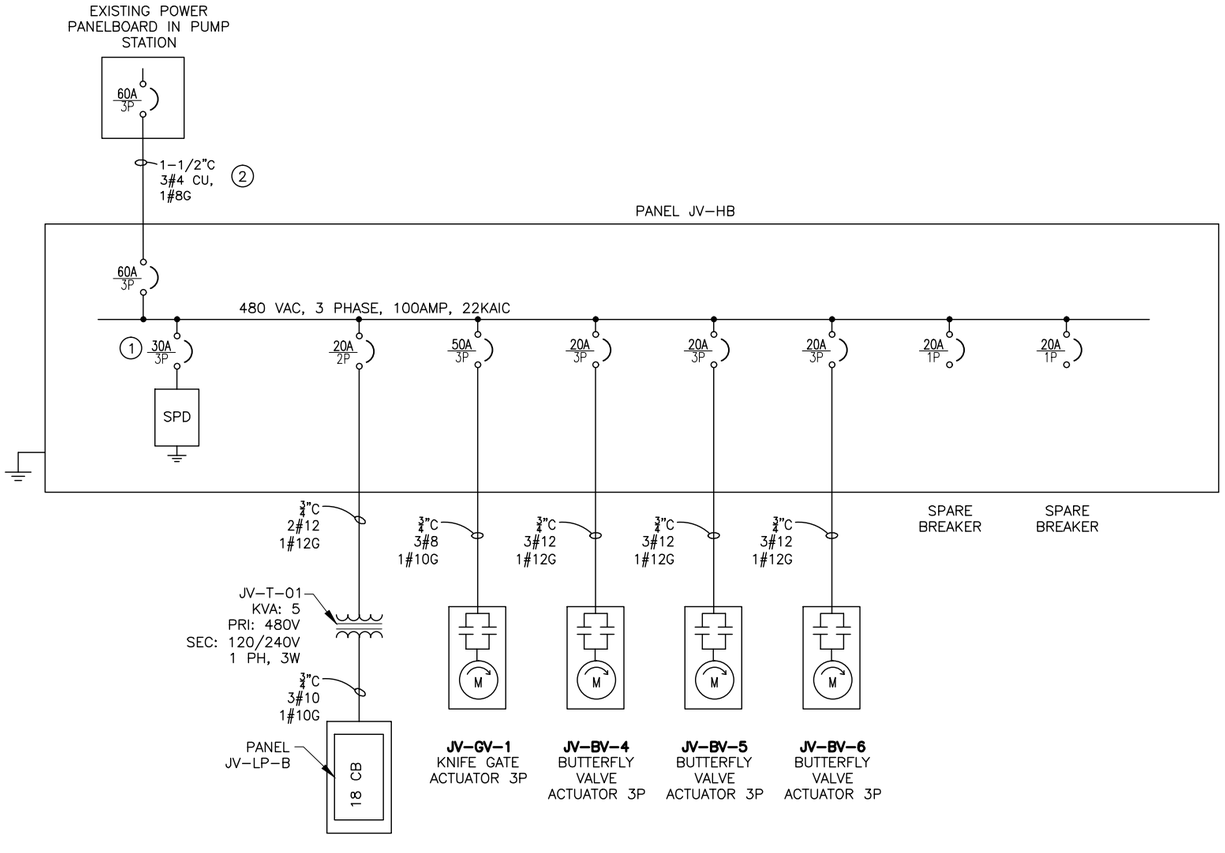
LOCATION: 13400 SOUTH VAULT	MFGR: CH	125 AMPS	VOLTS: 120/240
DIMENSIONS:	TYPE:	M.L.O.	PHASE: 1
MOUNTING: WALL	NEMA: 12	60 M.C.B.	WIRES: 3
FEED: BOTTOM		10,000 A.I.C.	

BRKR A	BRKR P	DESCRIPTION	WIRE SIZE	CONT. WATTS	N–CONT. WATTS	NO	PHASE LOADS A CONT.	PHASE LOADS A N–CONT.	PHASE LOADS B CONT.	PHASE LOADS B N–CONT.	NO	N–CONT. WATTS	CONT. WATTS	WIRE SIZE	DESCRIPTION	BRKR A	BRKR P
20	1	VAULT LIGHTS	3/4", 2#12, 1#12G	1184		1	1,558	0			2		374	3/4", 2#12, 1#12G	EXHAUST FAN NO.1 (JV–EF–04)	20	1
20	1	VAULT OUTLETS	3/4", 2#12, 1#12G		540	3			374	540	4		374	3/4", 2#12, 1#12G	SUMP PUMP (JV–SP–03) RECEPTACLE	20	1
20	1	VAULT EMERGENCY LIGHTS	3/4", 2#12, 1#12G	48		5	248	0			6		200	3/4", 2#12, 1#12G	RECTIFIER	20	2
20	1	SPARE				7			200	0	8		200	–	–	–	–
20	1	SPARE				9	500	0			10		500	3/4", 2#12, 1#12G	RTU PANEL	20	1
20	1	SPARE				11			0	0	12				SPARE	20	1
20	1	SPARE				13	0	0			14				SPARE	20	1
		SPACE				15			0	0	16				SPACE		
		SPACE				17	0	0			18				SPACE		
		TOTAL WATTS:		1232	540		2,306	0	574	540		0	1648				
		CONTINUOUS LOAD:		2880													
		CONTINUOUS LOAD *125%:		3,600													
		NON–CONTINUOUS LOAD:		540													
		DESIGN WATTS:		4,140													
		MIN. RATING (AMPS):		17													

NOTE:
0

KEY NOTES:

1. CONTRACTOR SHALL SUPPLY AND INSTALL A PANEL SURGE PROTECTIVE DEVICE. SIZE OF CIRCUIT BREAKER AND CONDUCTORS MAY VARY WITH DIFFERENT SURGE PROTECTIVE DEVICE (SPD) MANUFACTURER REQUIREMENTS.
2. POWER CONDUIT FROM PUMP STATION PANELBOARD SHALL BE INSTALLED IN SAME TRENCH AS FIBER OPTIC CABLE CONDUIT. FOR INFORMATION ON FIBER OPTIC CABLE CONDUIT, SEE SHEET E–11.



RECORD DRAWINGS

Revisions Drawn by S. Riggs Date November 2011

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

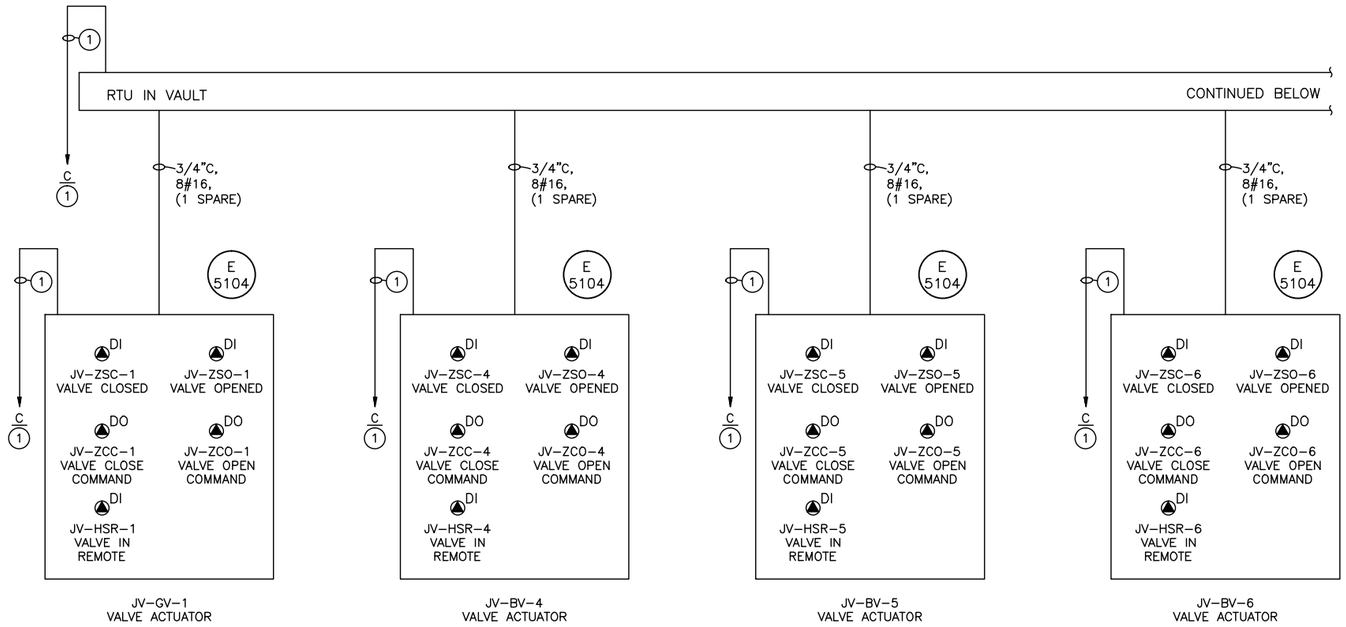
DESIGN D. MAXWELL DRAWN D. LAMPH
REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

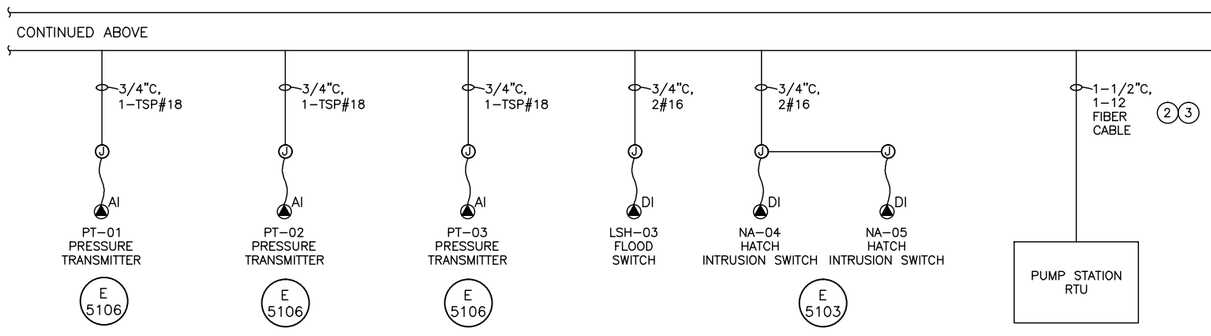
ELECTRICAL
13400 SOUTH VALVE & INTERCONNECTION VAULT ONE–LINE DIAGRAM

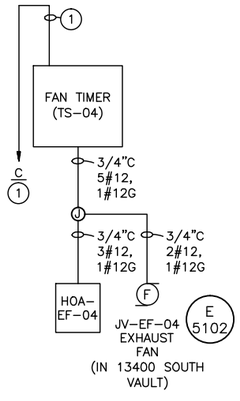
DATE: FEBRUARY 2010 PROJECT NUMBER 010–08–03

DRAWING NO. E–10

SHEET 106 OF 110







GENERAL NOTES:

1. REFER TO SHEET E-9 FOR EQUIPMENT LOCATIONS.

KEY NOTES:

(1) SEE PANEL SCHEDULE JV-HB ON SHEET E-10 FOR CONDUIT/CONDUCTOR SIZE.

(2) FIBER CABLE CONDUIT SHALL BE INSTALLED IN THE SAME TRENCH AS THE POWER CONDUIT. SEE SHEET E-10 FOR DETAILS. ANY 90 DEGREE BENDS IN THE FIBER CONDUIT TO PUMP STATION RTU SHALL HAVE A RADIUS GREATER THAN OR EQUAL TO 3'. INSTALL TRAFFIC RATED PULLBOXES AS REQUIRED TO EASE PULLING.

(3) THE FIBER SHALL MEET THE FOLLOWING:
FIBER OPTIC CABLE SHALL MEET THE FOLLOWING REQUIREMENTS:
- FIBER TYPE: MULTIMODE FIBER
- NUMBER OF FIBERS: 12
- CORE DIAMETER: 62.5 MICRONS
- CLADDING DIAMETER : 125 MICRONS
- MAXIMUM ATTENUATION: 3.5 DB/KM @ 850 NM; 1.5 DB/KM @ 1300 NM
- BANDWIDTH: 200 MHZ X KM @ 850 NM; 500 MHZ X KM @ 1300 NM
- BUFFER TYPE: LOOSE TUBE
- CABLE FILL: WATER BLOCKING TAPE
- CABLE CENTRAL STRENGTH MEMBER: DIELECTRIC
- OUTER JACKET: FLAME-RETARDANT, UV- RESISTANT PVC
- MAX. RECOMMENDED PULLING LOAD: 600LBF (2700 N)
- OUTER TEMPERATURE RANGE: -40 ˚C TO +70 ˚C
- PACKING: SPOOLS/REELS, PROTECTED DURING SHIPMENT
- MANUFACTURE: CORNING CABLE SYSTEMS

RECORD DRAWINGS
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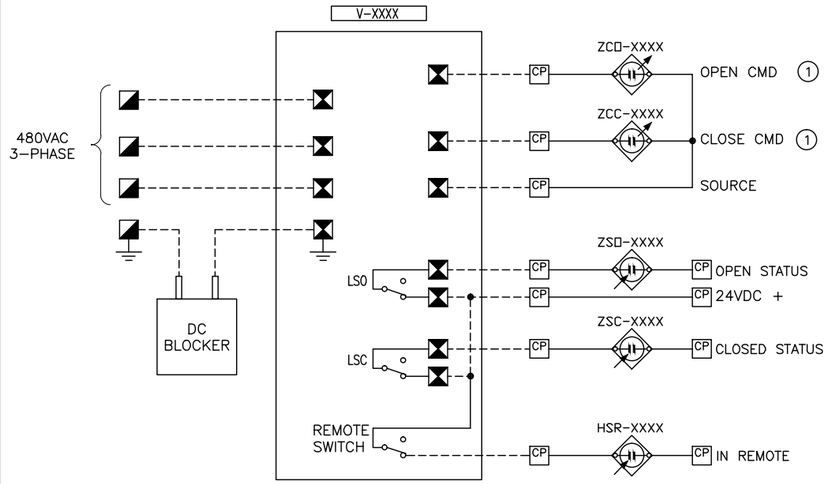
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN D. MAXWELL
DESIGN D. LAMPH
REVIEW
CHECKED D. STEWART
APPROVED D. MAXWELL

ELECTRICAL
13400 SOUTH ML VAULT CONTROL ONE-LINE DIAGRAM
DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. E-11
SHEET 107 OF 110



LEGEND

XXXX – TAG NUMBER

CP – PLC CONTROL PANEL TERMINALS

– POWER SOURCE TERMINALS

– VALVE ACTUATOR TERMINALS

NOTES

(1) OPEN AND CLOSE COMMANDS ARE SHOWN WITH SOURCE POWER INTERNAL TO ACTUATOR. IF EXTERNAL SOURCE IS USED CHANGE WIRING ACCORDINGLY.

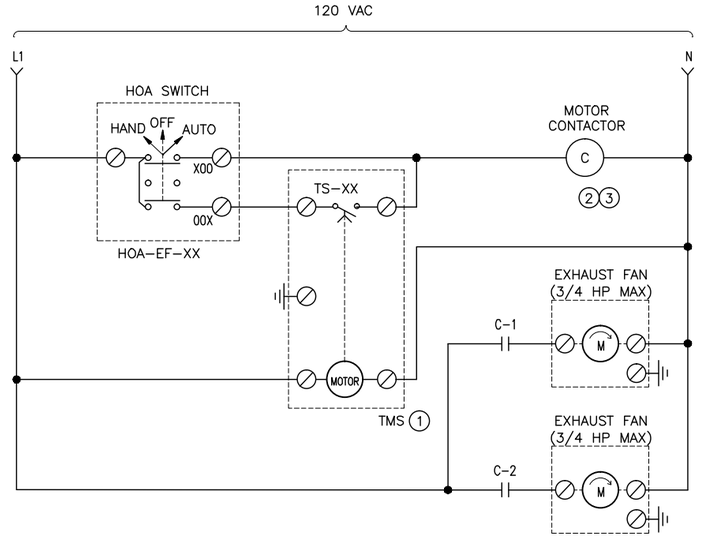
TYPICAL 480VAC REVERSING (OPEN/CLOSE) VALVE ACTUATOR CONTROL SCHEMATIC E 5101

NOTES:

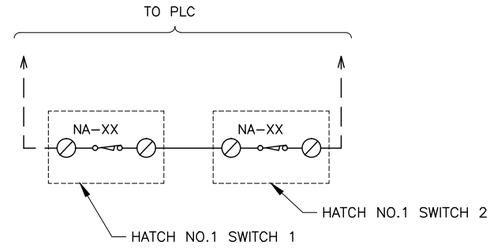
(1) TORK 8001 24 HR TIME SWITCH.

(2) CONTACTOR NOT REQUIRED FOR SINGLE MOTOR APPLICATION.

(3) MOTOR CONTACTOR SHALL BE RATED FOR LOAD OF MOTORS AND INSTALLED IN A NEMA 4 ENCLOSURE.



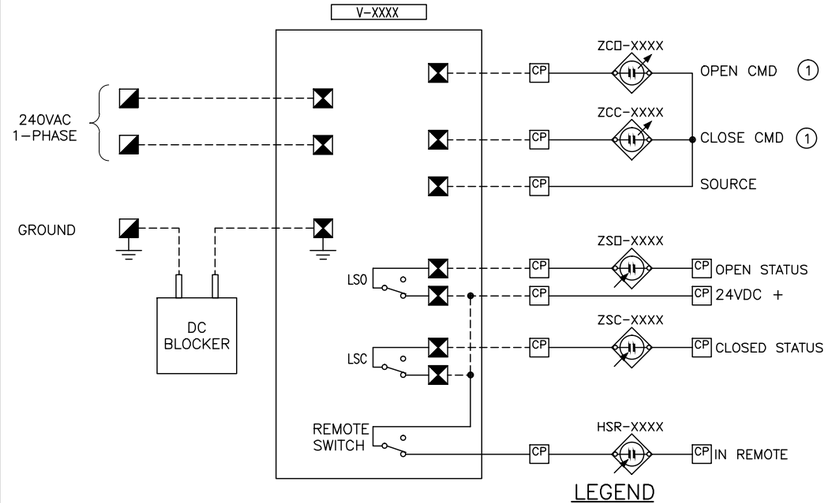
TYPICAL VAULT EXHAUST FAN CONTROL SCHEMATIC E 5102



NOTES:

1. SWITCH CONTACT CLOSED WHEN HATCH IS CLOSED.

TYPICAL HATCH INTRUSION SWITCHES DIAGRAM E 5103



LEGEND

XXXX – TAG NUMBER

CP – PLC CONTROL PANEL TERMINALS

– POWER SOURCE TERMINALS

– VALVE ACTUATOR TERMINALS

NOTES

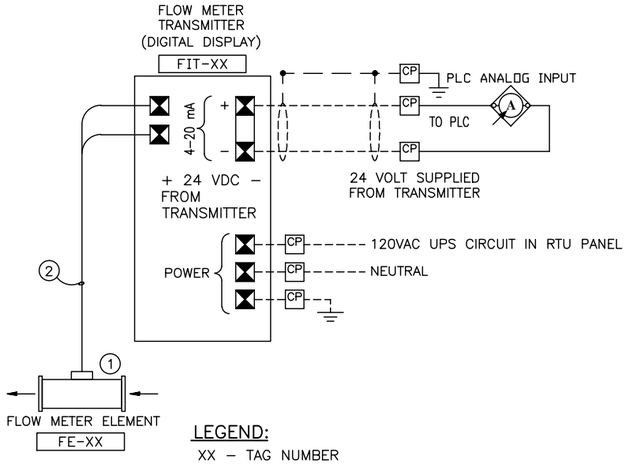
(1) OPEN AND CLOSE COMMANDS ARE SHOWN WITH SOURCE POWER INTERNAL TO ACTUATOR. IF EXTERNAL SOURCE IS USED CHANGE WIRING ACCORDINGLY.

TYPICAL 240VAC SINGLE PHASE REVERSING (OPEN/CLOSE) VALVE ACTUATOR CONTROL SCHEMATIC E 5104

NOTES:

(1) GROUND FLOW METER PRIMARY AS REQUIRED BY MANUFACTURER AND IN ACCORDANCE WITH CATHODIC PROTECTION GUIDELINES.

(2) CABLE BY VENDOR OR AS RECOMMENDED BY VENDOR.



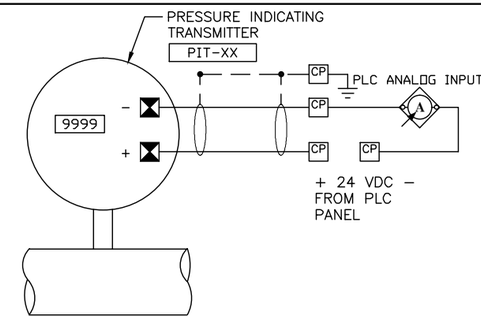
LEGEND:

XX – TAG NUMBER

CP – CONTROL PANEL TERMINALS

– FLOW METER DISPLAY TERMINALS

TYPICAL FLOW METER SCHEMATIC E 5105



NOTES:

1. GROUND SHIELD AT CONTROL PANEL ONLY.

LEGEND:

XX – TAG NUMBER

CP – CONTROL PANEL TERMINALS

– PRESSURE TRANSMITTER TERMINALS

PRESSURE INDICATING TRANSMITTER SCHEMATIC E 5106

RECORD DRAWINGS

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Bowen Collins & Associates, Inc. Consulting Engineers

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2 PROJECT

DESIGN D. MAXWELL DRAWN D. LAMPH
REVIEW CHECKED D. STEWART APPROVED D. MAXWELL

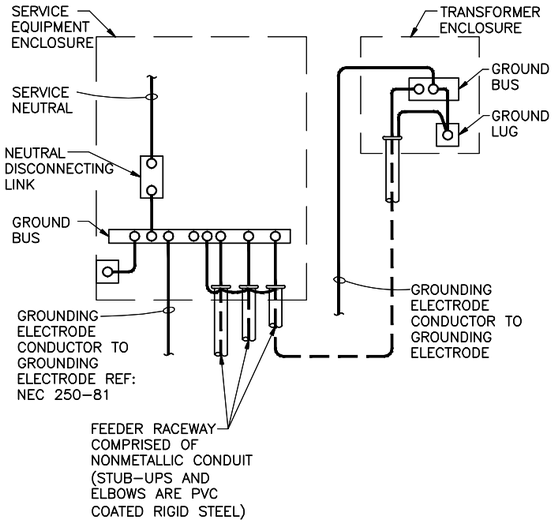
ELECTRICAL

CONTROL SCHEMATIC DETAIL

DATE: FEBRUARY 2010 PROJECT NUMBER 010-08-03

DRAWING NO. E-12

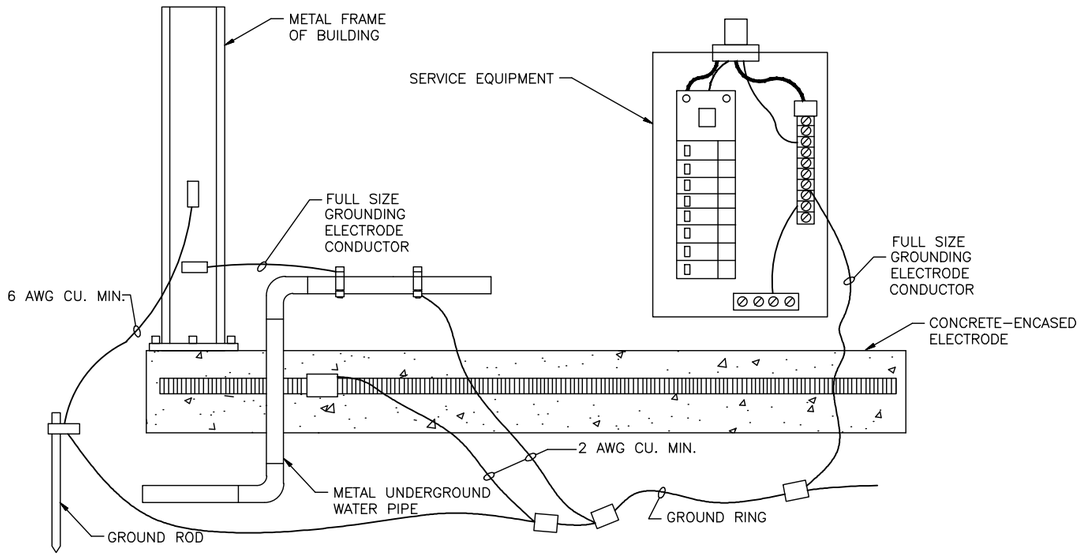
SHEET 108 OF 110



SERVICE AND EQUIPMENT GROUNDING DETAIL

SCALE: NTS

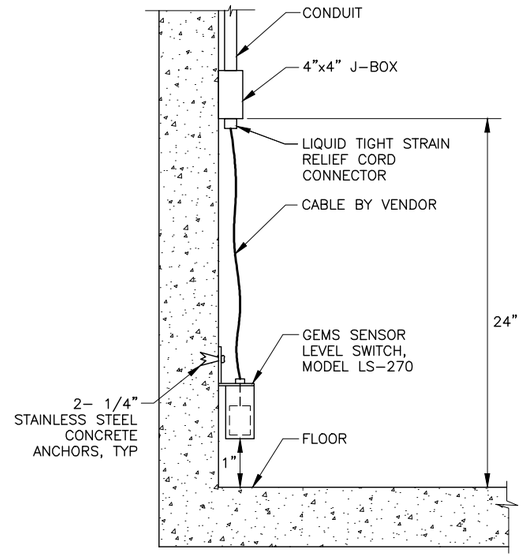
E 5000



STANDARD DETAIL FOR GROUNDING ELECTRODE SYSTEM

SCALE: NTS

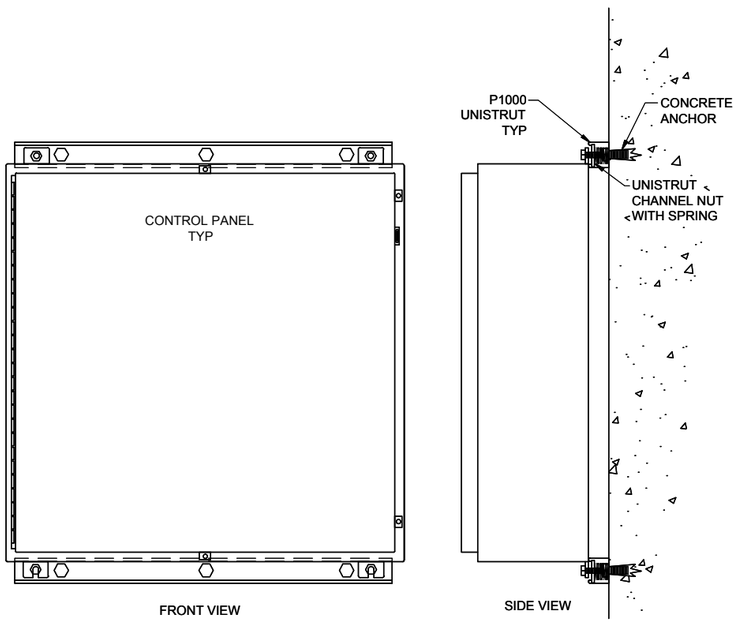
E 5001



FLOOD SWITCH INSTALLATION DETAIL

SCALE: NTS

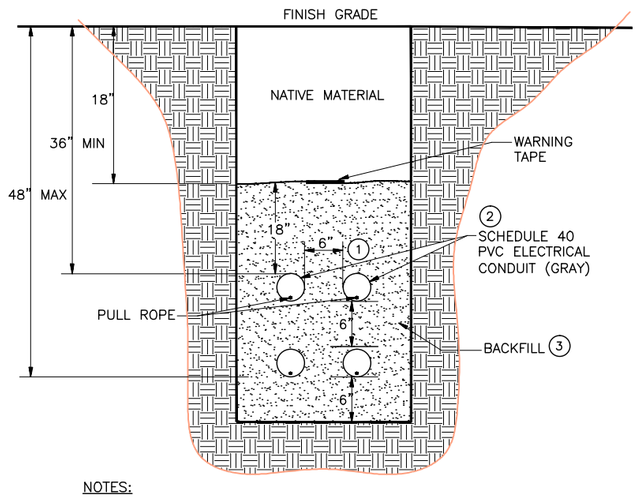
E 5002



TYPICAL PANEL MOUNTING DETAIL ON WALL

SCALE: NTS

E 5003



NOTES:

1. TYPICAL SPACING FOR CONDUITS.
2. REFER TO CONDUIT/CONDUCTOR SCHEDULES FOR CONDUIT SIZE.
3. BACKFILL MATERIAL SHALL MEET SPECIFICATION FOR PIPE ZONE.

CONDUIT TRENCH DETAIL

SCALE: NTS

E 5004

NA

SCALE: NTS

E 5005

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2 PROJECT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN D. MAXWELL DESIGN
DRAWN D. LAMPH DRAWN
REVIEW D. STEWART CHECKED
D. MAXWELL APPROVED

ELECTRICAL

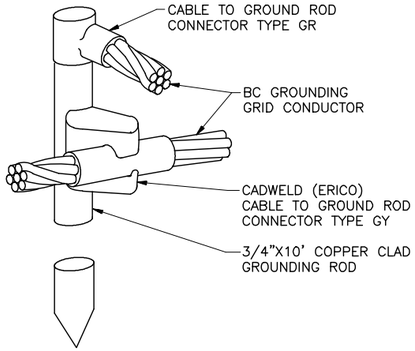
ELECTRICAL DETAILS - 1

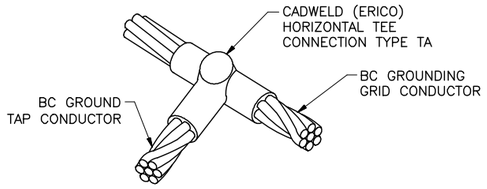
DATE: FEBRUARY 2010

PROJECT NUMBER 010-08-03

DRAWING NO. E-13

SHEET 109 OF 110





GROUND CONNECTION DETAIL

SCALE: NTS

E 5006

NA

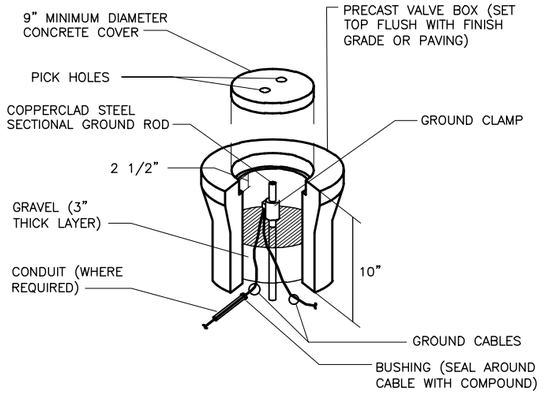
SCALE: NTS

E 5007

NA

SCALE: NTS

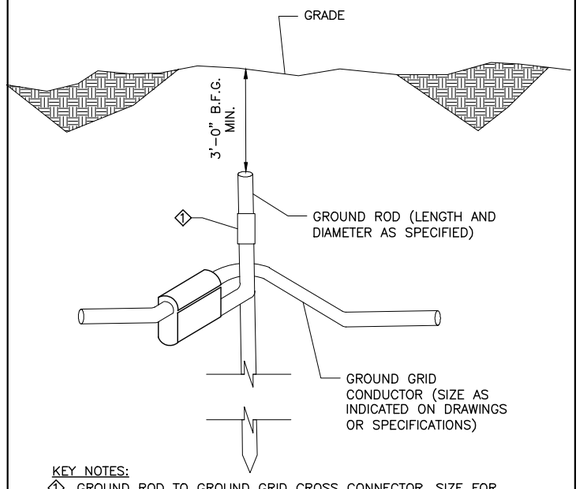
E 5008



GROUND ROD AND WELL DETAIL

SCALE: NTS

E 5009



KEY NOTES:

1 GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER MANUFACTURER'S GUIDELINES.

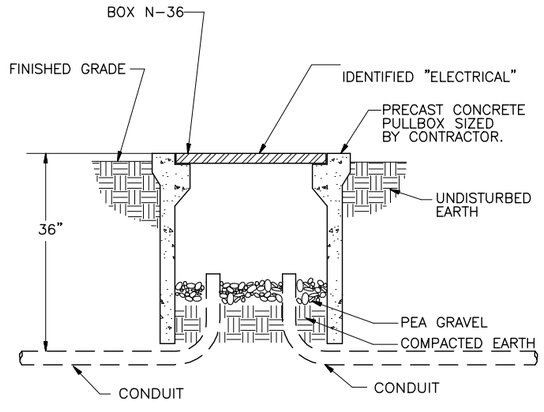
GROUND ROD INSTALLATION DETAIL

SCALE: NTS

E 5010

NOTES

1. ALL CONDUITS ARE NOT SHOWN IN THIS DETAIL. REFER TO OTHER DRAWINGS FOR SIZE AND NUMBER OF CONDUITS.
2. CONTRACTOR SHALL SIZE PULL BOX IN ACCORDANCE WITH NEC AND IF APPLICABLE CABLE MANUFACTURER'S RECOMMENDATIONS.



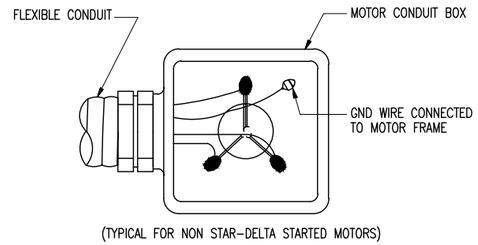
PULL BOX DETAIL

SCALE: NTS

E 5011

NOTES:

1. LUGGED AND BOLTED, INSULATED WITH 1/2 LAPPED LAYER OF VARNISHED CAMBRIC TAPE AND TWO 1/2 LAPPED LAYERS OF VINYL PLASTIC ELECTRICIANS TAPE WITH IRREGULAR SURFACES PADDED PER SPEC.



(TYPICAL FOR NON STAR-DELTA STARTED MOTORS)

MAKEUP AT MOTOR DETAIL

SCALE: NTS

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SOUTHWEST AQUEDUCT REACH 2 PROJECT

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DRAWN D. LAMPH DRAWN
REVIEW D. STEWART CHECKED
D. MAXWELL APPROVED

ELECTRICAL

ELECTRICAL DETAILS - 2

DATE: FEBRUARY 2010
PROJECT NUMBER 010-08-03

DRAWING NO. E-14

SHEET 110 OF 110